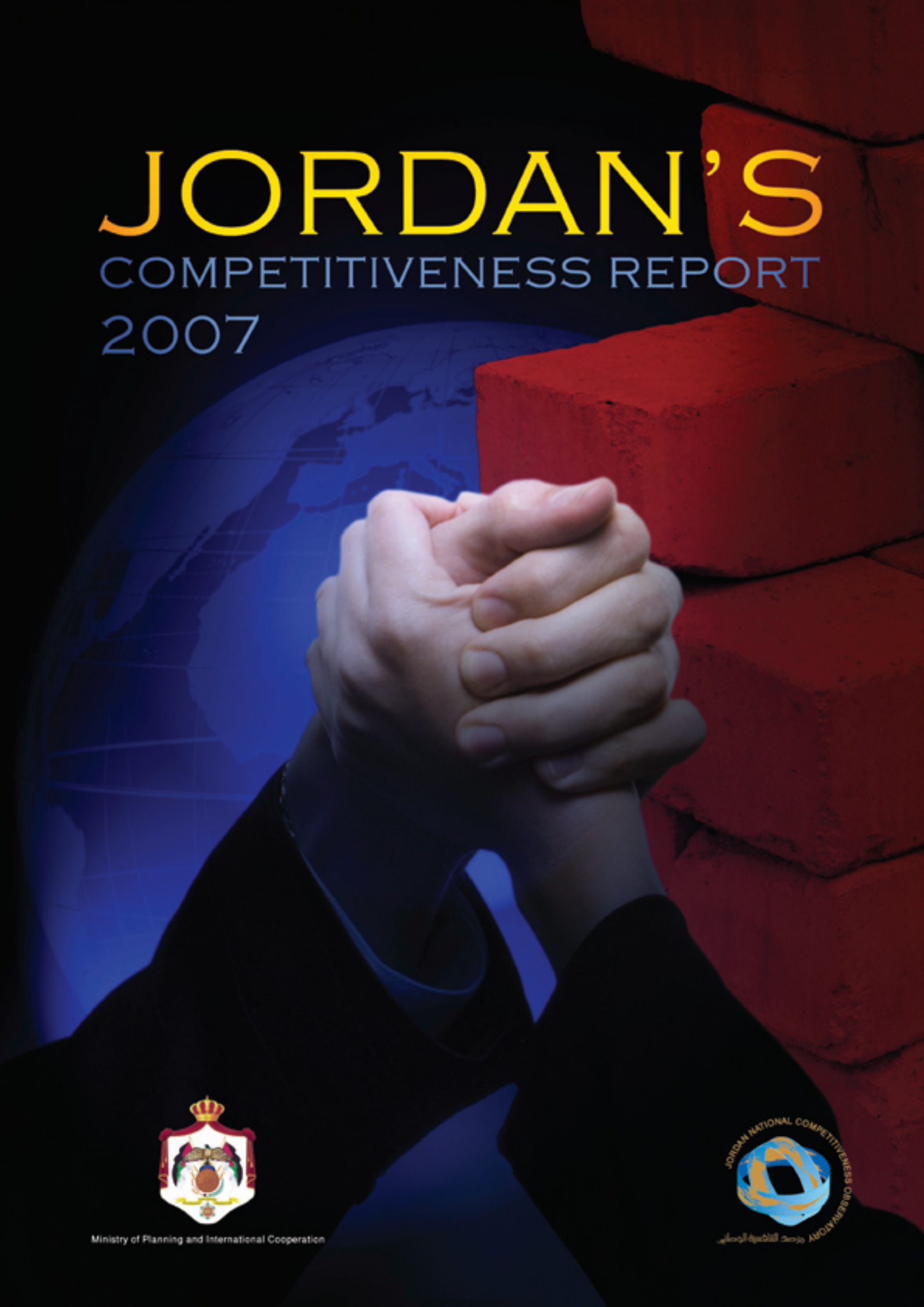
JORDAN'S COMPETITIVENESS REPORT 2007



Ministry of Planning and International Cooperation

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Jordan's Competitiveness Report 2007

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Jordan National Competitiveness Report 2007

"Jordan's Window to Global Competitiveness"

Foreword

We live in a rapidly changing and dynamic world, with the growing integration of societies, economies, and technologies. Living in a highly competitive global economy, Jordan understands that the requirements of integrating into this economy and enhancing the country's growth are enormous. Identifying opportunities through innovation, efficiency and dynamism are critical for any nation that intends to be an active player in the global economy.

It is clear that the factors determining the competitiveness of nations are diverse and numerous. The key elements for competitiveness that prevailed in the past are no longer sufficient to drive the world economic growth today. There is a new order of the day, focusing on quality of education and training, the efficiency of industrial organization, the capacity to make continuous improvements in production processes, the intensity of R&D and its industrial exploitation, the fluidity of the conditions under which markets operate, the availability of competitive service infrastructures, product quality, and the way in which corporate strategies take account of the consequences of changes in society, such as improved environmental protection.

The process of overcoming the obstacles that prevent developing nations from becoming competitors in the global economy is not an easy task. It is a lengthy and extensive process requiring a sharper focus and greater participation from all the parties involved. Selecting the adequate policy measures for both the public and private sectors by involving citizens in the process positively impacts the social and economic development of a nation. Collective and coherent actions are needed in each interrelated area, involving all stakeholders in an active partnership to promote sustained economic growth as well as to address the long-term challenges of development.

Therefore, Jordan has been adopting structural, economic, legal, administrative, and social reform programs. Many elements of these programs have been successfully implemented, while others are still in progress. Our reform efforts have clearly corresponded to the evolving global trends, and success has been attained in molding a lucrative investment climate, in which businesses can thrive by tapping into the vast world market. To strengthen Jordan's economic base and improve the competitiveness and efficiency of Jordanian enterprises, an export-oriented policy was adopted. This was reflected in joining a series of initiatives of international and regional free trade arrangements. We have also worked towards developing export platforms that offer world class investment infrastructure, free access to major regional and international markets, and lucrative investment incentive packages.

A large number of laws and regulations were amended and investment related laws were streamlined. The regulatory environment seeks to open and improve integration, reduce bureaucracy, simplify procedures, as well as facilitate services offered to local, Arab, and foreign investors to come and invest in Jordan. The Government of Jordan remains committed to further enhance the investment climate in Jordan and work towards introducing new measures aimed at implementing procedures related to starting a business, dealing with licenses, registering property, employing workers, and enforcing contracts.

The report at hand is part of our overall efforts to understand the factors influencing private-sector led economic growth, and ways to successfully create new employment opportunities and increase standards of living.

This report is the first of its kind gathering the research results and analyzing specific sectors competitiveness. It provides recent accurate data describing Jordan's competitiveness on the macro and micro economy, as well as across five selected sectors.

In closing, I would like to extend my appreciation to the members of the Competitiveness Unit for their efforts in putting together this report. I would also like to thank the private sector and government entities for their continuous support to the work of the Competitiveness Unit. I hope that this report provides you with the needed information that enables you to explore the vast array of investment opportunities available in Jordan.

Suhair Al-Ali

Minister of Planning and
International Cooperation

Acknowledgements

I avail the occasion of publishing this first comprehensive sector-specific assessment report by The Jordan National Competitiveness Team (JNCT) to express my gratitude to Her Excellency Mrs. Suhair Al-Ali, Minister of Planning and International Cooperation and His Excellency Mr. Nasser Shraideh, the Secretary General for their support that motivated and encouraged our team members in accomplishing this initiative.

My truthful sincere appreciation is also extended to The United States Agency for International development (USAID) for its generous funding of our work and continuous confidence in our team's vision.

Our sincere thanks are also due to the policy makers and key stakeholders of the private and public sectors of the ICT, Pharmaceuticals, Medical Tourism, Tourism and Higher Education sectors who, despite their other commitments dedicated their time to the one-to-one meetings, roundtables, surveys fill-outs and many other contributions that helped the Jordan Competitiveness Team to conclude this document.

This publication has truly incorporated joint efforts, patience, dedication and heartfelt belief of the JNCT team members in the significance of the Team's mission for the national development. For this I proudly acknowledge the graceful work of Nour Tarawneh, Raed Zahrawi, Ra'fat Rawabdeh, Rasha Hinnawi and Ruba Mansour. It was a pleasure working with them and being inspired of their enthusiasm and genuineness to realize our mutual vision.

Amjad Attar,
Director of JNCT

Contents

Acronyms

APMC	Arab Pharmeceuticals Manufacturing Company
ASEZ	Aqaba Special Economic Zone
ATM	Automatic Teller Machine (Bank Machine)
AUB	American University in Beiruit
B2B	Business-to-Business e-commerce
B2C	Business-to-Consumer e-commerce
BA	Bachelor of Arts
BCI	Business Competitiveness Index
BDI	Business Data Israel
BS	Bachelor of Science
CA	Council for Accreditation
CAGR	Compound Annual Growth Rate
CEEMEA	Central Eastern Europe, Middle East and Africa
CEO	Chief Executive Officer
cGMP	Current Good Manufacturing Practices
CHE	Council of Higher Education
CMM	Capability Maturity Model
CRO	Clinical Research Organization
DHCC	Dubai Healthcare City
EFB	European Federation of Biotechnology
EGP	Egyptian Pound
EIR	Economic and Institutional Regime
EIU	Economic Intelligence Unit
EPC	Executive Privatization Commission
ERfKE	Broad Educational Reform Program
ESS	Employment Support Services
ETCP	Egyptian Technical Colleges Project
EU	European Union
EUN	Egyptian University Network
FAS	Foreign Agricultural Service, US Department of Agriculture
FDA	Food and Drug Administration
FDC	Faculty Development Center
FDI	Foreign Direct Investment
FLDP	Faculty Leaders Develeopment Project
FOEP	Faculty of Education Project
G2C	Government-to-Consumer e-commerce
GCC	Gulf Cooperation Council
GCI	Global Competitiveness Index
GCR	Global Competitiveness Report
GDP	Gross Domestic Product
GMP	Good Manufacturing Practices
GoJ	Government of Jordan
GSLI	Global Services Location Index
HCSR	Higher Committee for Scientific Research
HEDF	Higher Education Development Forum
HEDP	Higher Education Development Project
HEEP	Higher Education Enhancement Project
HEEPF	Higher Education Enhancement Project Fund
HEI	Higher Education Initatives
HERV	Higher Education Relevancy Unit
HHC	Higher Health Council
HR	Human Resources
ICT	Information and Communication Technology
ICTP	Information and Communcation Technology Project
IMF	International Monetary Fund
INT@J/INTAJ	Information Technology Association-Jordan
IT	Information Technology
JAED	Jordan Authority for Enterprise Development
JAPM	The Jordanian Association of Manufacturers of Pharmeceuticals and Medical Appliances
JAU	Jordan Applied University
JD	Jordan Dinar
JEI	Jordan Education Initiative
JICA	Japanese International Cooperation Agency
JNCT	Jordan National Competitiveness Team
JUST	Jordan University of Science and Technology
JV 2020 HES	Jordan Vision 2020 Higher Education Strategy
KAM	Knowledge Assessment Methodology
ME	Middle East
MENA	Middle East and North Africa
MICE	Meetings, Incentives, Conferences and Events

MNC	Multinational Corporation
MoH	Ministry of Health
MoHESR	Ministry of Higher Education and Scientific Research
MoICT	Ministry of Information and Communication Technology
MonoJO	Jordan Company for Antibody Production
MoPIC	Minitstry of Planning and International Cooperation
NBN	National Broadband Network
NCHRD	National Center for Human Resources Development
NGO	Non-Governmental Organization
NNSR	National Network of Scientific Research
NQAACP	National Quality Assurance and Accreditation Project Committee
NYU	New York University
OECD	Organisation for Economic Cooperation and Development
PC	Personal Computer
PE	Price-to-Earnings (ratio)
PHA	Private Hospital Association
PhD	Philosophy Doctorate
PhRMA	Pharmeceutical Research and Manufactuers of America
QA	Quality Assurance
QAAP	Quality Assurance and Accreditation Project
R&D	Research and Development
RJ	Royal Jordanian Airlines
RMS	Royal Medical Services
SABEQ	Sustainable Achievement of Business Expansion and Quality
SARS	Severe Accute Respiratory Syndrome
SAVE	Scientific, Academic, Volunteer, Educational
SCU	Supreme Council of Universities
SEZ	Special Economic Zone
T&T Strategy	Travel and Tourism Strategy
TCC	Total Country Connectivity
TCCM	Total Country Connectivity Measure
TRC	Telecom Regulatory Commission
TRIPS	Trade Related Aspects of Intellectual Property Rights
UAE	United Arab Emirates
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCWA	United Nations Economic and Social Commission for Western Africa
UNWTO	United Nations World Tourism Organization
UNWTO	United Nations World Trade Organization
USAID	United States Agency for International Development
USD	United States Dollar
VC	Venture Capital
WDI	World Development Indicators
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WTO	World Trade Organization
WTTC	World Travel and Tourism Council

Tables and Figures

Tables

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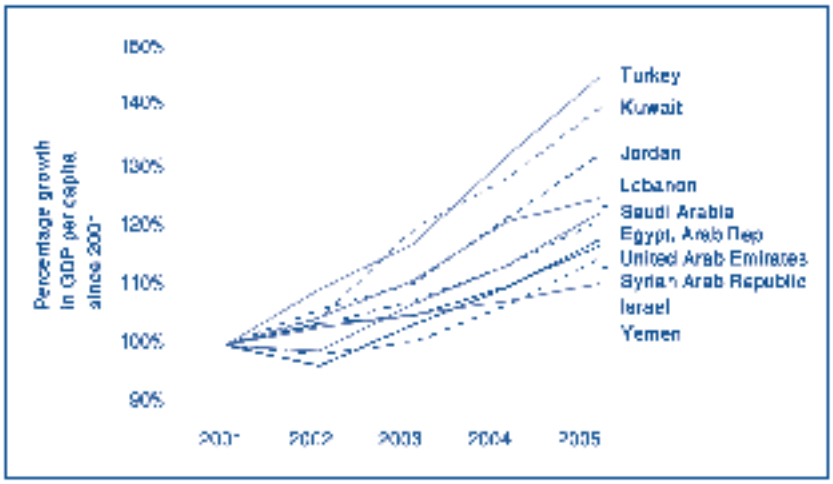
EXECUTIVE SUMMARY

This report provides a snapshot of the performance of Jordan's economy in 2007 and assesses the state of competitiveness for five selected sectors.

WHY IS COMPETITIVENESS IMPORTANT FOR JORDAN?

Competitiveness is critical to Jordan's future prosperity. Jordan's recent economic growth is notable and impressive-one of only three countries in the region to achieve annual growth in GDP per capital above 6% since 2001. Competitiveness will be Jordan's route to continued economic growth and increased prosperity.

Figure 1.1 - Growth in Regional Prosperity



Sources: World Bank 2007, JAA Calculations

A strong, competitive economy produces more and better opportunities for its people to increase their standard of living. With increases in the mobility of human and financial capital, countries are competing to offer the most conducive and productive environment for business. Jordan has been a leader in the region in many high-value, knowledge-based industries. However, Jordan's historically strong competitive position in the region is at risk. At a time when countries in the region and across the world are accelerating economic reform and making it easier than ever for business to do business, Jordan is faced with a decision: keep up and get ahead of the competition or be left behind and relegated to lower value economic activities.

Jordan's productive business sectors compete on an industry and firm-level basis. Globally competitive business is the generator of economic growth and increased per capita income. Jordanian business competes globally against competitive firms worldwide. Those firms that target desirable markets, and are able to commend substantial prices for their products and services from customers in these markets, will succeed and grow. This success demands firm and sector-level competitiveness, and the support of a world-competitive enabling environment.

HOW DO WE KNOW IF JORDAN IS MAINTAINING ITS COMPETITIVENESS?

Competitiveness can be measured. Jordan can track its competitiveness by measuring key indicators across and within the economy and then comparing these indicators to benchmarks in the region and worldwide. The key indicators assess the levels of prosperity and human development, the stability of the macro-economy, the health of the micro-economy, and the ability of business to create jobs and income for current and future generations of Jordanians. In Jordan, much is known and understood about the macro-economy and the underlying dynamics that determine its health. To date, however, there is only limited information on the microeconomic environment and the constraints faced by business within specific sectors. Also, Jordanians lack information about how competitive countries and industries are developing outside Jordan and the region. Benchmarking the three sets of indicators-macro-economic environment, micro-economic environment and industry specific performance - enables Jordan to objectively assess its performance and learn from other countries.

How is Jordan performing?

Based on the analysis conducted for this report, there are a number of key themes that are critical to Jordan's competitiveness:

1. **Jordan has accomplished a great deal**. Jordan has achieved many improvements in the quality of its business environment. Jordan's businesses also boast many accomplishments in the international arena.

2. **Yet there is urgency for action**. Across the public and private sector, leaders are impatient for reform, and for a vision of competitiveness that is consistently and aggressively pursued. Many strategies and reform initiatives developed over the past five years are struggling to gain traction. At the same time, other countries are making tangible, highly visible progress in reforming and transforming their economies.

3. **Jordan's economic openness and current foreign investment flows into Jordan are an opportunity to invest in productive activities**. Foreign investment can provide capital needed for productive activities. If structured and channeled effectively, FDI can serve as a source of knowledge and linkages to other markets. Yet, currently the majority of foreign investment flows appear to be going to unproductive real estate investments that risk driving inflation, and the cost of living, higher. Equally, Jordanians are investing in their economy, although not at the levels and with the productivity that is desirable.

4. **But Jordan's business environment still presents major obstacles for business**. An environment that enables businesses, and that does not create barriers to business investment and operations, is critical to attracting investment and keeping talented Jordanians in Jordan. Globally competitive investors and skilled workers require an environment in which they can maximize productivity, implement competitive strategies, and fairly capture a high return. Jordan's business environment imposes numerous constraints that are limiting labor productivity, efficient operation and the return on financial capital.

5. **Jordan's human capital, the foundation of its competitiveness, is at risk**. Jordan is a seedbed of skilled and experienced professionals in the Middle East. But 'brain drain', the migration of professionals to other regions, and education and training systems that do not meet business' needs are immediate and significant threats to Jordan's long-term prosperity. With limited physical resources, Jordan's future prosperity will be determined by its ability to train and retain highly skilled and productive workers.

6. **Public-private cooperation must be based in fact and focused on action**. The challenges facing Jordan require a coordinated effort to act. Formal dialogue that builds consensus across the public and private sectors is critical for Jordan's economic leadership to build the momentum for change and action.

These themes emerge from and are supported by the data, information, and analysis in this report. Across the indicators there is much to progress to report and results to celebrate:

- Jordan has ranked consistently as one of the top 50 most competitive economies worldwide for the past five years. Jordan ranked 49th out of 131 countries on the Global Competitiveness Index and 48th out of 127 countries on the Business Competitiveness Index. Are these results sufficient to encourage huge gains in competitiveness and economic growth?

- Responsible monetary policy has so far contained inflationary pressures due to high liquidity in the region, rising oil prices, and the macroeconomic strain of absorbing large numbers of refugees. While overall inflation jumped to 6% in 2006, core inflation stayed close to 2%.

- Foreign direct investment in Jordan increased 81% on average from 2001 to 2005. FDI is reported to have doubled in 2006 from USD $1.5 billon in 2005. Domestic credit grew by 40% from 2005 to 2006.

- Exports are 51% of GDP and have been growing annually at rates between 15 and 20% since 2001. Yet, export growth contin ues to lag behind other countries in the region such as Turkey (23%), Egypt (23%), and UAE (33%).

- Jordan's political stability, governing institutions, and infrastructure are competitive advantages and continue to compare favorably with other countries, regionally and worldwide. Jordan ranked 32nd on its governing institutions and 42nd on infrastructure in this year's Global Competitiveness Report (GCR). Specific advantages include the relatively light burden of government regulations, protection of property rights (physical and intellectual) and judicial independence.

- Jordan's education expenditure is 25th globally in the GCR. Overall literacy in Jordan is near 100% and the strength of its higher education system is noted as a competitive advantage (ranking 37th).

- Since 2004, the business environment in Jordan has seen some modest improvements. Four procedures have been eliminated in starting a business and associated costs have been reduced from 81 days and 104% of per capita income to only 14 days and 66% of per capita income. The cost associated with obtaining a license has decreased more than 16% since 2005.

- Certain aspects of Jordan's goods markets are performing well: the intensity of local competition, time required to start a business, and the degree of customer orientation.

However, significant risks and weaknesses in the macro-economy, a constrained business environment, and the erosion of Jordan's traditional competitive advantages are cause for concern and urgent action:

- The rising cost of fuel and continued instability in the region continue to be worrisome short- and medium-term risks for Jordan. Continued high fiscal deficits, 7.4% of GDP in 2006, and government debt, 72.5% of GDP, further heighten the risk of a negative impact due to oil prices and regional violence.

- Levels of foreign investment, while impressive, may be misleading as much of it is due to the real estate boom and a peak in government privatizations in 2006.

- In spite of several bright spots, Jordan's overall business environment is constraining business growth and investment. Reform is much slower than other countries in the region such as Egypt and Saudi Arabia, which were designated as top reformers in 2007. As highlighted by the World Bank "Doing Business Indicators", the specific weaknesses in Jordan include: protecting investors (Jordan ranks 107th out of 178 countries), registering property (109th), enforcing contracts (128th), and starting a business (133rd). Compared to top global performers, Jordan's business environment imposes many risks, delays and transaction costs.

- Business leaders in Jordan consider policy instability, inefficient government bureaucracy, and the poor work ethic of the national labor force to be highly problematic factors for conducting business.

- Despite high expenditure per capita in education, the primary enrollment (88.9%) and secondary enrollment (87.4%) are well below average for highly competitive countries. As a barometer for Jordan's future workforce, raising primary and secondary enrollment rates will be critical for Jordan's future competitiveness.

- There is clear consensus among business leaders that action across the public and private sectors in implementing industry-specific strategies is failing.

- Despite increased focus and attention on Jordan's knowledge-driven sectors, Jordan's rankings in the GCR reveal significant weaknesses in company spending on R&D and industry-academia collaboration, indicating that Jordan is not maximizing the potential of its strong pool of scientists and engineers. This situation is further exacerbated by the continued high brain drain of Jordan's most qualified technical workforce to other countries.

- Regional competitors are investing heavily in Jordan's traditional competitive advantages (higher education, healthcare and medical tourism, and leisure tourism). These investments will challenge Jordan's competitive position and risk eroding its regional market share in key sectors.

This report contains assessments of five of Jordan's primary industries: pharmaceuticals, IT, tourism, medical tourism, and higher education. The assessments reveal unique strengths and specific weaknesses in the business environment that these industries have when compared to regional and international competitors. The weaknesses create vulnerabilities in each industry's competitive position, regionally and internationally. When considered collectively, the five assessments reveal several common constraints in Jordan's business environment. Highlights for each sector include:

Pharmaceuticals

- Key industry facts:
  - Total production equals USD $450 million, a six-fold increase since 1990
  - 75% of production is export representing 4.12% of Jordan's total export base
  - 80% of exports are destined for other countries in the Middle East
  - Employment is estimated to be 8000, of which 50% are considered to be professional staff
- The industry boasts internationally certified cGMP compliant manufacturing facilities and processes and a proven ability to meet the highest international standards for pharmaceutical production
- Despite a substantial pool of professional staff, there is a shortage of research and technical professionals in the industry. According to an industry survey, Jordan's universities are not providing students with the skill set that the industry needs. With continuous brain drain, Jordan's pharmaceuticals industry is falling behind in its ability to train and retain the best workers.
- The current make-up of the workforce and training systems is misaligned with global industry market trends that are demanding different skills sets than traditionally needed in the manufacturing of generics pharmaceuticals.
- Supporting services are limited and highly variable in their quality, especially the clinical research organizations.
- Middle market pharmaceutical firms in Jordan may be having trouble accessing growth financing to consolidate and grow market share in the region and internationally.
- Despite much talking and planning, and with a few exceptions, university-industry collaboration on research is limited and rarely results in marketable, commercial products.

ICT

- Key industry facts:
  - Total revenues of USD $750 million in 2006, a four-fold increase since 2001
  - Export revenues totaled USD $191 million in 2006, up from just USD $40 million in 2001
  - Employment is estimated to be 10,000, up from just 1000 in 2001
- First and fully liberalized telecommunications market in the region-a very competitive mobile market with more operators than any other country in the region.
- Highlighted by the government as a key catalyst for economic growth.
- Rapid growth and a continuous migration of talent to the Gulf are resulting in a shortage of trained professionals.
- Research and development spending is relatively low compared to regional and international peers.
- The industry is made up of many small firms competing on price rather than quality, the ability to provide customized, innovative solutions.

Tourism

- Key industry facts:
  - Total receipts in 2006 were USD $1.6 billion, representing 9.2% of GDP
  - Growth at an average of 4.5% since 2003
  - Employment is estimated to be 147,000
  - Average length of stay is 4.2 days and average spend per day is USD $59
- Over 60% of tourists arriving in Jordan are from the Middle East region. Arrivals from the Middle East seg ment have grown at 19% per annum since 2001. By contrast, tourists from Europe make up just 13% and have been growing at 8% per year.
- Costs for inputs (fuel, electricity, water) appear to be rising faster than sales creating a squeeze on the industry's margins and pressure to attract more tourists.
- The industry is suffering from a shortage of skills specific to hospitality and tourism including: communication, customer care and quality, supervisory management skills, marketing and sales techniques, and professional skills training in operational areas.
- Inadequate dialogue and coordination continue to plague the industry, especially with government agencies at the operational level.
- Petra was selected to be among the Seven New Wonders of the World in 2007. This will raise Jordan's profile worldwide, but also risks reinforcing an over-reliance by the industry on the country's few traditional attractions.

Medical Tourism

- Key industry facts:
  - Jordan hosted 114,000 foreign medical patients in 2005 generating revenues of USD $533 million
  - Modest growth around 109.000 since 1998, just 2% per year while estimates of global market growth over the same period are 15-30%
  - Two internationally accredited hospitals
- Nearly all foreign patients come from the region, with the highest percentage arriving from Yemen (29%), Libya (16%), Palestine (12%) and Sudan (7%).
- Current marketing focus is on traditional markets with limited efforts in attracting patients from new markets.
- Accreditation and industry standards are still very weak and compromise industry standards.
- Despite numerous industry associations and dedicated units within the government, coordination across the sector is poor.
- There is a shortage of nurses in Jordan and a trend of skilled labor emigration to the Gulf that is likely to pick up as Gulf countries build and staff healthcare facilities.

Higher Education

- Key industry facts:
  - 26 universities operating in Jordan: 10 public and 16 private
  - Total of 234,000 higher education students in Jordan - over 10% were foreign students
  - International students studying in Jordan has increased 67% from 14,600 to nearly 25,000 since 2001
- Tertiary enrollment rates have jumped from 17.9% to 39% since 2001 as a result of the introduction of numerous private universities.
- The total academic staff has only increased from 6,547 to 8,793, reducing the overall teacher-student ratio from 1:24 to 1:27.
- Limited efforts by the schools to understand and track the motivations of international students.
- Significant investments into higher education facilities in the Gulf could marginalize Jordan's role as a center for higher education in the region.

How does this report contribute to Jordan's competitiveness?

The publication of the Jordan National Competitiveness Report affords Jordan the opportunity to directly confront and resolve many of these binding constraints to business growth and competitiveness. The report provides the most current, credible data describing Jordan's competitiveness on the macro-economy, micro-economy, and across five selected example sectors. It compares Jordan's competitiveness performance, and that of its industries, against other countries in the region and globally. The report also provides a framework for interpreting this data, highlights areas of strong and weak performance, and suggests interpretations and implications for Jordan. Where justified, the report suggests opportunities and directions for follow-on action. However, the report is not prescriptive - it simply presents the data and helps to interpret the information.

This report is designed to be a non-partisan, fact-driven base of information that Jordanians can use in their deliberation, planning, and prioritization. It provides information that enables all Jordanians to understand their country's economic performance and to consider their economic vision and future.

This report is the first in what is expected to be an annual Jordan National Competitiveness Report. It joins a select group of forward-looking countries that transparently report on their competitiveness performance. It is the first product of the Jordan National Competitiveness Observatory.

The Jordan Competitiveness Observatory

The Jordan National Competitiveness Observatory is an economic research unit hosted within the Ministry of Planning and International Corporation that continuously assesses and measures the competitiveness of the Jordanian economy by analyzing the competitiveness of its industries and the environment in which they operate. The Observatory's aim is to provide policymakers and business leaders with a comprehensive and accurate evaluation of the current state of Jordan's competitiveness. Specifically, the Observatory has three objectives:

- To provide valuable information to the public and private sectors in the form of extensive indicators, benchmarking data and analysis around the complex range of factors that determine competitiveness.
- Based on this data and analysis, to act as a center for communicating emerging issues and trends in the private sector, and identifying obstacles to economic development.
- By providing sound, credible data and analysis, to found a solid base for a public-private partnership that aims at implementing actions for enhancing the competitiveness of the Jordanian economy.

Who is this report for?

This report is useful for a range of economic leaders in Jordan:

For **government leaders,** it can inform policymaking, provide stimulus for economic reform and serve as a touchstone for coordinating decision-making. For **business leaders,** the overall analysis of the business environment, the individual sector assessments and industry surveys can be a fact-based platform for communicating key constraints to investment and growth to the government and serve as an updated source of market information in Jordan, the region and internationally. For **universities**, the report can serve as a source of data and information for research and instruction. For **civil society and non-governmental organizations** that are interested in improving specific aspects of Jordan's economic and social environment, this report is useful as a guide to improving specific economic and social indicators.

How is the Report Organized?

This report is organized around proven competitiveness frameworks. Part I is an introduction to competitiveness and its importance to Jordan, and analyzes the stability of the macro-economy, the health of the micro-economic environment, and summarizes Jordan's rankings in the Global Competitiveness Report and the World Bank Doing Business Indicators. Part II assess the five selected sectors: pharmaceuticals, information technology, tourism, medical tourism, and higher education. Part III concludes the analysis and suggests elements of a Competitiveness Agenda for Jordan in 2008.

Part I: Jordan's Economic Performance

INTRODUCTION

The purpose of this report is to provide a comprehensive picture of the state of competitiveness of Jordan's economy. This report reviews the macroeconomic and microeconomic environment in Jordan and then analyzes the competitiveness of 5 sectors: pharmaceuticals, information technology, tourism, higher education, and medical tourism. By analyzing the national economy and a selection of specific sectors, this report highlights the constraints that are limitng Jordan's private sector and may be holding back Jordan's economic growth prospects.

Numerous government agencies, private organizations, and donor initiatives have analyzed facets of Jordan's economy. In Jordan, much is known and understood about the macro-economy and the underlying dynamics that determine its health. The indicators for tracking macroeconomic performance are clear and readily available. Similarly, indicators for the overall microeconomic environment are codified and tracked by international reports such as the World Economic Forum *Global Competitiveness Report and the World Bank Doing Business Report*. These reports provide an overall assessment of the general issues faced across the private sector. Yet to date, there has not been an attempt in Jordan to evaluate the microeconomic environment within specific sectors and then link these insights to the common constraints faced by many businesses in Jordan.

A key analytical input into this study is a set of 5 sector-specific surveys completed by business leaders on the current state of competitiveness in their sector. The resounding response across all sectors is that there is urgency for action in order to preserve and elevate Jordan's competitiveness. This report aims to catalyze action by providing the economic leadership in Jordan with the data and analysis required to achieve a consensus for reform.

Why is competitiveness important for Jordan?

Enhancing competitiveness is one of the most critical economic challenges and one of the most important goals for increasing Jordan's prosperity for several reasons:

Reducing poverty and increasing prosperity requires achieving high rates of productivity growth, especially in export-driven industries.
Increasing export levels will drive Jordan's growth and prosperity. However, currently there are aspects of Jordan's export base that are unsustainable. The competitiveness of Jordanian exports has been based on a strong education system, relatively cheap labor and trade agreements that favor Jordan as a trade partner. However, cheap labor and trade agreements are not a source of long-term competitive advantage. With limited natural resources, Jordan must create its prosperity from its knowledge and innovation, entrepreneurial spirit and openness to the world.

Today, there is unprecedented opportunity for investing in industries that will achieve sustained growth.
High financial liquidity in the Middle East makes investors thirsty for opportunities that are supported by good information and sound business strategies. As a politically stable country with a well-educated workforce, Jordan is positioned to be a favored destination for investment.

Across the region, focus on diversified investment and knowledge-based economic growth is increasing. The knowledge- and technology-based sectors that are increasingly highlighted as the sectors of the future in the region are the sectors of today in Jordan: medical services, pharmaceuticals, information technology services, education services and cultural tourism among others. Jordan's legacy as a leading "knowledge-driven" economy in the Arab world means that this shift in the economic landscape presents a unique opportunity for Jordan to build on its strengths.

Global recognition of Jordan as a cornerstone for stability in the region is growing. Businesses and governments worldwide are increasingly aware of and interested in the Middle East as a crossroads for Europe, Africa and Asia. The world is turning to Jordan for leadership in the Middle East as its neighbors struggle with varying degrees of domestic socio-political unrest.

However, economic, social and political trends present immediate risks to competitiveness and continued growth. If unaddressed, these risks threaten to stall or reverse prosperity gains.
Regional conflict and social and demographic trends are resulting in a significant influx of migrants coming to Jordan to find jobs; a trend that is increasing social tensions. Ensuring adequate employment will be essential to avoiding social problems in the future.

The region's financial liquidity is placing a premium on skilled labor. This presents two immediate risks for Jordan: First, Jordanian talent is being drawn to other parts of the region as neighboring countries improve their business climate and investment in knowledge-based industries. Second, as the compensation for skilled labor increases economic inequality may rise as well, presenting a challenge for Jordan to ensure economic prosperity is widespread across the entire population.

Jordan's competitive advantage as one of the leading knowledge-based economies in the Middle East is at risk. The rapid pace of globalization, technological change and recent investments by neighboring countries in knowledge-driven industries threaten to relegate Jordanian producers to comparatively low positions on their respective value chains unless action is taken to reform the business environment, further upgrade the work-force and quickly adopt emerging technologies.

Figure 1.2 - Jordan's Prosperity Triangle

The future competitiveness of Jordan will only come from improving the productivity of its people and ensuring that Jordan is an easy place to do business and create prosperity. An educated workforce needs an environment that fosters economic opportunity, allowing many entrepreneurs in many competitive sectors to thrive regionally and compete internationally. Knowledge-driven prosperity must be fostered in an environment of stability, opportunity and social well-being.

What is Competitiveness?

Competitiveness can be defined as sustainable increases in productivity resulting in improved incomes for the average citizen. A competitive economy in Jordan would mean Jordanian products and services meet the test of the marketplace without protection or subsidies, in ways that boost the average incomes of Jordanians.

Competing in the international arena requires building the capacity to understand international consumer and market trends and then translating this knowledge and insight into higher value products and services. Competitiveness is determined by the productivity (value per unit of input) with which an economy uses its human, capital and natural resources. Productivity depends on the value, uniqueness and quality of a product, as well as the efficiency with which it is produced.

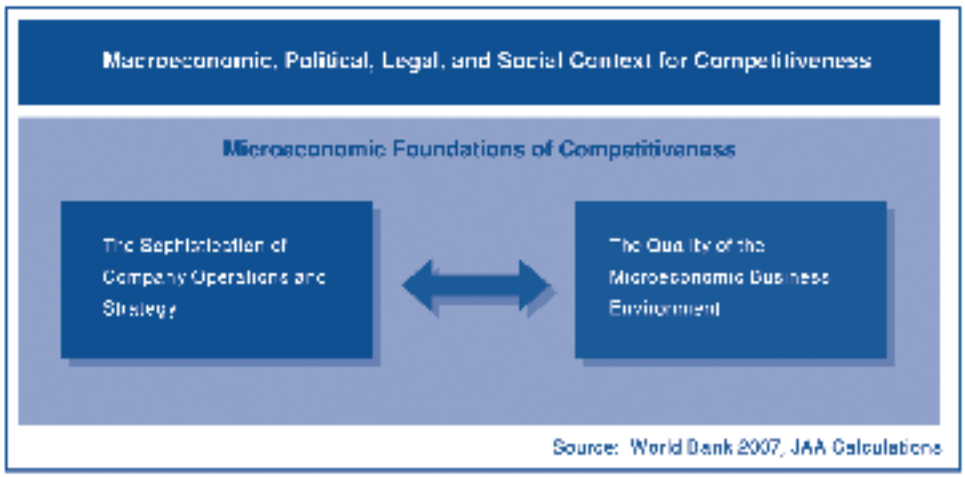
Although good strategic decisions enhance competitiveness, competitiveness is not about picking industries that will grow in the future. It is about improving the business environment that allows many entrepreneurs and companies in a variety of industries to make good strategic decisions and implement them efficiently. Competitiveness is about how firms compete in their industries.

The productivity of local industries is critical to competitiveness even if attracting key foreign investors can contribute to export competitiveness. This requires local industry build the capacity to learn about customers, understand markets, innovate, improve quality and invest in human resources. It also requires firms to cooperate with other members of the supply chain and work constructively with private sector leadership and government to solve problems and address constraints in the business environment.

Competitiveness cannot be built on natural resource abundance or cheap labor, especially when relative productivity is taken into account in relation to neighboring countries, many of which also have relatively cheap labor on a productivity-adjusted basis. Nor should competitiveness be confused with foreign investment in unproductive assets. While foreign investment can be an important generator of foreign exchange and government revenues (through privatization) - it will not create large numbers of sustainable, productive jobs. Unless the revenues generated from these activities are invested in human capacity and in facilitating (but not subsidizing) the emergence of competitive industry clusters, the benefits may not extend to all citizens.

Professor Michael Porter of Harvard Business School has developed a useful framework for understanding the determinants of competitiveness, as illustrated in Figure 1.3. Professor Porter's model serves as this report's framework for analyzing Jordan's growth prospects and organizing the various determinants of competitiveness and economic growth potential.

Figure 1.3 - Determinants of Competitiveness



- Nat o s o eg o s compete offe g t e most p oduct ve e v o me t fo bus ess
- T e pub c a d p vate secto s p ay d ffe e t but te e ated o es c eat g a p oduct ve eco omy
- A sou d mac oeco om c, po t ca , ega , a d soc a co text c eates t e pote t a fo compet t ve ess, but s ot suffic e t

The model illustrates how a country's potential for competitiveness and long-run economic growth is created by a sound macroeconomic, political, legal and social context and a continuous drive to improve the microeconomic environment, foster the sophistication of local companies, and increase local competition.

The model also illustrates how Jordan's future economic growth track will be determined by its ability to support:

1. Sector-specific growth, driven by local companies that are successful in raising the sophistication of their operations and strategies and increasing their competitiveness

2. Improvements in the business environment and removal of cross-cutting, binding constraints to growth

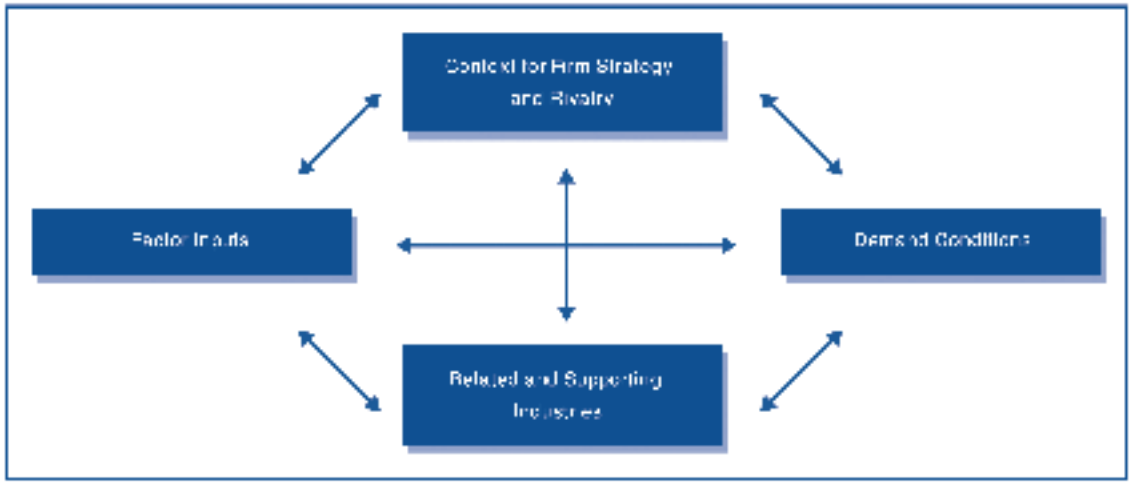
This report focuses specifically on sector-specific growth and the underlying microeconomic determinants of competitiveness for each sector. To understand the current state of Jordan's competitiveness in pharmaceuticals, tourism, information technology, medical tourism and higher education, this study uses the Competitiveness Diamond, often referred to as the Porter Diamond [1]. The economic basis of the Competitiveness Diamond has been validated by numerous analytical and case studies and is now used by industries and governments worldwide to assess industry cluster competitiveness and to develop strategies for improving competitiveness. It is structured around 4 pillars:

1. Factor (Input) Conditions: skilled labor, infrastructure, etc.
2. Demand Conditions: size and type of accessible demand
3. Context for Firm Strategy and Rivalry: conditions for conducting business
4. Related / Supporting Industries: presence of suppliers and supporting industries

[1] Porter, Michael E. The Competitive Advantage of Nations, The Free Press, New York, NY, 1990.

Within each sector and across the economy, these 4 facets interact to form a foundation for building a competitive economy. For emerging economies like Jordan, strengthening a competitive industry starts with understanding the demand for products and services in key markets and then organizing and investing in the factor inputs (supply/production) to best meet the needs of the market. Only by accessing and understanding the specific needs of the market can the Jordanian businesses utilize their resources in the most efficient way and create the most value for the customer and the economy in which they operate. As a more in-depth understanding of the market is developed and the supply is upgraded accordingly, the industry cluster then must concentrate on upgrading its suppliers and supporting industries and working with the government to improve its business environment.

Figure 1.4 - porter competitiveness diamond

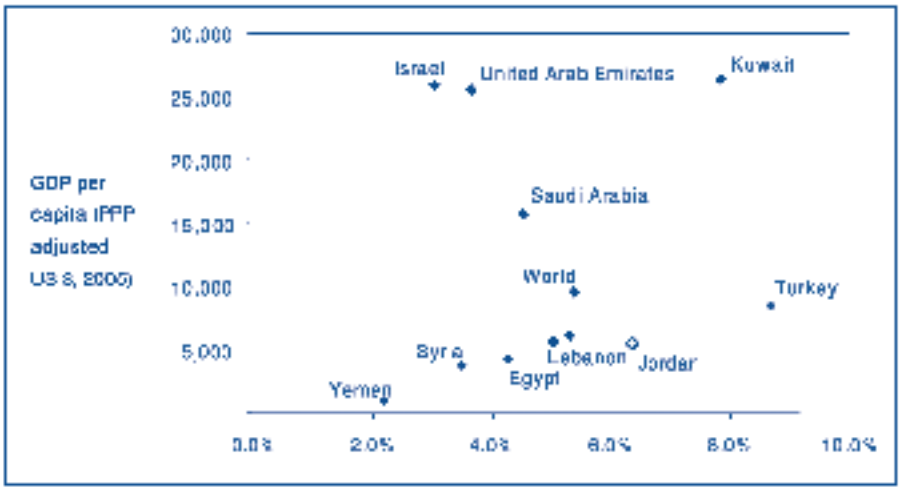


Assessing the Foundation of Jordan's Prosperity

Assessing the Foundation of Jordan's Prosperity

With high-sustained GDP growth rates and a per capita income of approximately USD $2,400[2] Jordan is on the road of transition to the next stage of development: from being a 'factor driven economy' to becoming an 'efficiency driven economy.'[3] The country has achieved declining rates of poverty and improving living conditions: education and health standards are rising.

Figure 2.1 - Regional Prosperity



Source: World Bank 2007, JAA Calculations.

In the macroeconomic environment, Jordan has adopted policy measures to address structural defects in the public sector, while creating an enabling environment for greater private sector participation.
The government has been working on curbing its fiscal and external deficit, while responsibly handling its monetary policy. Both domestic and international demands have been booming, fuelled by high remittances from the Gulf and surging exports. However, the country's macroeconomic environment continues to give cause for concern. While much remains to be done on the domestic structural transformation, recent global and regional events, primarily the 2003 Iraq war, threaten to steer the country off its path towards macroeconomic stability.

In the micro-economic environment, Jordan's business environment reform is being eclipsed by its neighbors.
Jordan's historical competitive advantages in health, education, and the quality of its workforce are deteriorating rapidly as regional competitors invest heavily in these areas. Despite continued talk of transforming Jordan into a knowledge-driven economy, debilitating weaknesses exist in its knowledge and research infrastructure and innovative capacity.

These constraints can only be resolved by building on Jordan's solid institutional structure. Economic reform has been slow to take shape in Jordan, but can be accelerated quickly. While increasing Jordan's innovative capacity can only take place over the medium to long-term, resolving barriers to business start-up and productive investment can take place in a matter of months given the commitment of the economic leadership.

[2] At current exchange rate, EIU Jordan Country Report, 2007

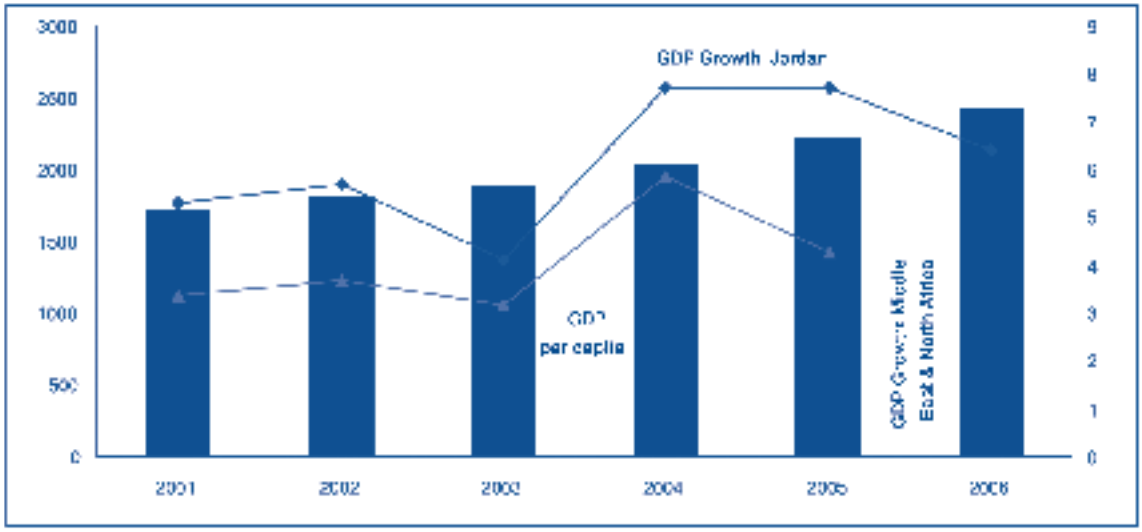
[3] According to the Global Competitiveness Report, countries around the world have been categorized into 3 groups depending on their stage of development: the lowest stage of development is termed 'factor driven' and growth is driven by competing on natural commodities and low costs; the second stage is the 'efficiency driven' stage where increasing enhanced productivity and movement upstream on the value chain becomes the engine of growth; the most advanced stage is the 'innovation driven' stage where economies compete on knowledge capital, ideas and sophistication in operations and products.

The following section analyses the current state of the macroeconomic and microeconomic foundations for competitiveness in Jordan.

Macroeconomic Performance

In the context of its historical performance, and in comparison to the regional average, the Jordanian economy has been performing well since 2001. GDP has been growing at a sustained rate of 5-7% in the last 5 years and touched 7.7% in 2005, while the GDP per capita has grown from USD $1,700 in 2001 to over USD $2,400 in 2006. This growth is primarily being fueled by robust domestic demand, particularly private consumption demand that is soaring as a result of record remittances from the Gulf. Also fueling the growth is persistently strong investment, particularly in the services infrastructure (tourism) and in the real estate and construction sectors. Yet despite the growth, the increased demand has noticeably driven up construction costs that are being reflected in the rising prices in the sector[4].

Figure 2.2 - GDP per capita (USD), Rate of Growth of GDP: Jordan, MENA

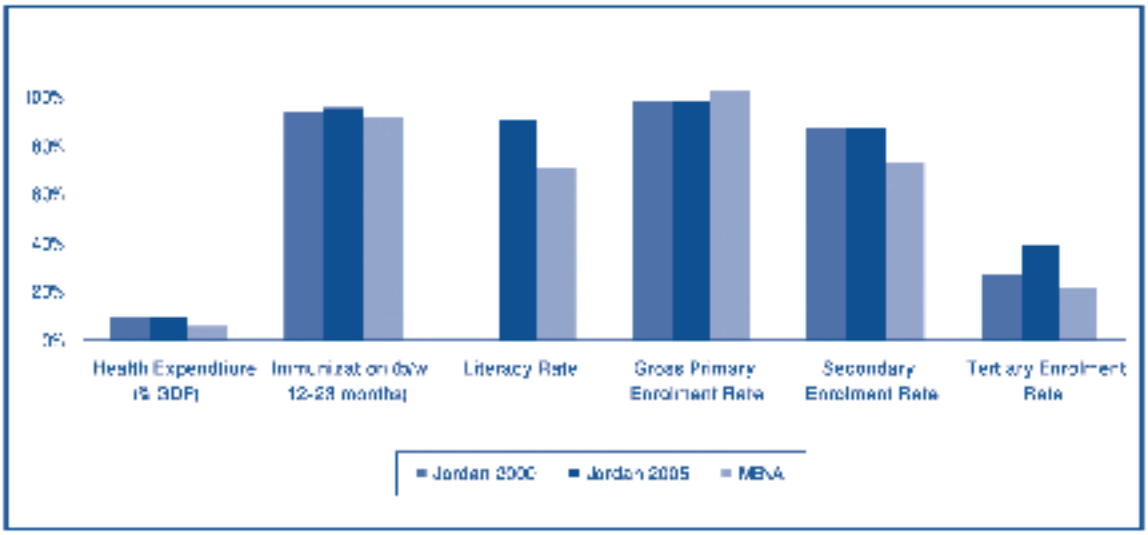


Source: WDI & Country Report, Economist Intelligence Unit (EIU)

This growth has translated to a decline in poverty rates in the country, and an overall improvement in the social well-being of the population, as signaled by the improving social indicators. The poverty rate declined from over 20% in the late 1990s to 14.7% in 2006. Education enrolment rates have increased and the country has achieved almost 100% literacy for both men and women. Health indicators are slightly improved from prior years in Jordan and the regional average. The infant mortality rate in Jordan is 22 compared to the regional average of 43, and life expectancy at birth is 72 years compared to 70 in the region. These achievements are reflected in the country's improved ranking in the UNDP Human Development Index from 94 in 2000 to 86 in 2006.[5]

[4] www.oxfordbusinessgroup.com
[5] From the UNDP website on Human Development Reports

Figure 2.3 - Prosperity Indicators, 2000, 2005



Source: WDI 2007

Jordan's challenge lies in tackling its historically high twin deficits, both fiscal and trade. One of the main reasons for the deficit is the vulnerability to negative external shocks - due to high dependence on oil imports, large foreign aid inflows and significant security expenditures stemming from the political instability of the region.

The fiscal deficit has hovered between 8% and 14% of GDP in the last 6 years and the current account deficit peaked at 25% of GDP in 2005. The driving factors behind the continued fiscal deficits have been high state security and defense expenditures and fuel subsidies that are compounded by a low domestic revenue base. Grants make up a large share of revenues, exposing the fiscal balance to the possibility of negative external shocks. Jordan's economy has reflected an almost constant negative trade balance due to significant dependence on imported oil and hence on the variability of international oil prices. While the current leadership has adopted several policy measures to rectify the underlying structural defects, global and regional events in 2003 knocked the country off its path of improving fiscal conditions. However, recent data and future projections suggest that things may be improving.

Since the Jordanian dinar is pegged to the US dollar, the country's Central Bank has little flexibility in using its monetary policy tools. However, despite this restriction, it has been performing well, curbing inflationary pressures (inflation was up to 6.2% in 2006 driven by fuel) that are evident given the rich liquidity in the region and in the country, and the potential of US inflation. Furthermore, the impact of absorbing around 500 thousand Iraqis in the domestic economy is also straining prices*. Positive investor sentiments, both domestic and international, have resulted in surging growth in credit to the private sector and large inflows of FDI. Domestic credit to the private sector grew at a record 40% in 2006 and preliminary data indicates that FDI flows doubled from USD $1.5 billion in 2005 to over USD $3.0 billion in 2006.

* The recent study conducted by Norway's Fafo Institute for Applied International Studies Concludes that there are around 500,000 Iraqis in Jordan accounting for almost 9 percent of the total population.

GROWTH OF GDP

GDP has been growing at an impressive rate of over 6% since the beginning of this decade. This growth has been spurred by private consumption and buoyant investment. Private consumption has been fueled by continuous high remittances from the Jordanian overseas workforce and by Iraqi expatriates (who now account for 20% of the Jordanian population). Investment has been soaring in all sectors of the economy, but primarily so in the construction and real estate sector, as well as the service-sector infrastructure of the tourism industry.

Table 2.1 - Components of gross domestic product

Components of gross domestic product	2005
Private Consumption	87.3%
Government Consumption	15.8%
Fixed Investment	30.6%
Stockbuilding	3.9%
Exports of goods & services	65.6%
Imports of goods & services	93.5%

Source: Depart of Statistics Report 2007

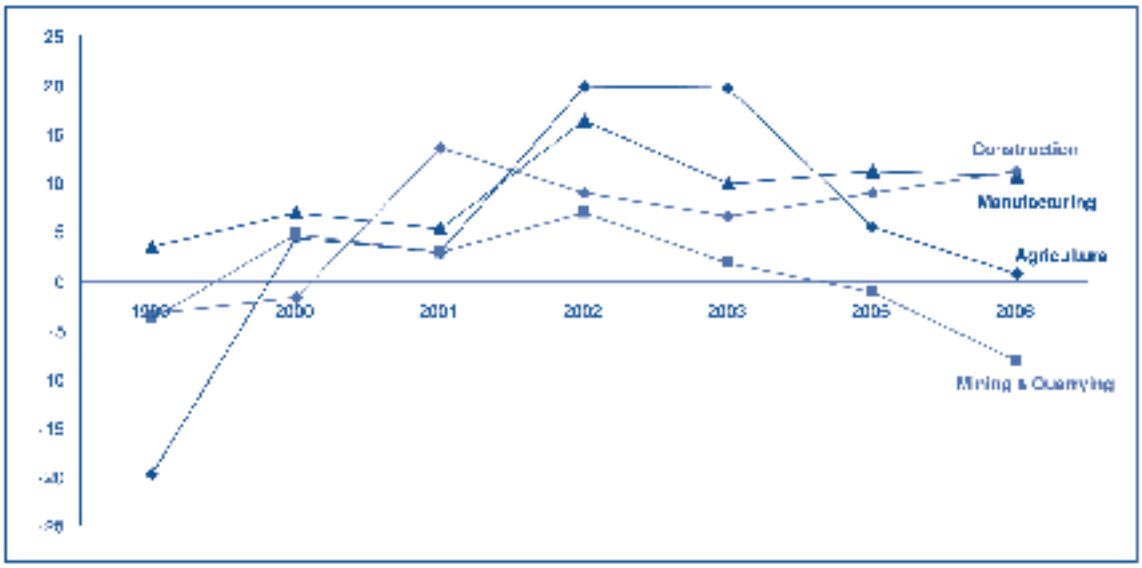
Table 2.2 - Fastest Growing Sectors: 2006-06

Fastest Growing Sectors	%Growth
Construction	11.1
Manufacturing Industry	10.6
Community, Social & Personal Services	10.6
Financial & Real Estate Sectors	9.3
Electricity & Water	8.2
Wholesale, Retail, Restaurants, and Hotels	7.3
Telecommunications and Transport	6.7

Source: Ministry of Planning & International Cooperation, Jordan

All sectors of the economy have shown positive growth in the last few years, apart from mining. The greatest expansion was seen in the construction sector which grew at a rate of 11% in 2006. The growth of the construction sector appears to be a symptom of the real estate boom in Jordan.

Figure 2.4 - Rates of Growth in Selected Sectors of Economy

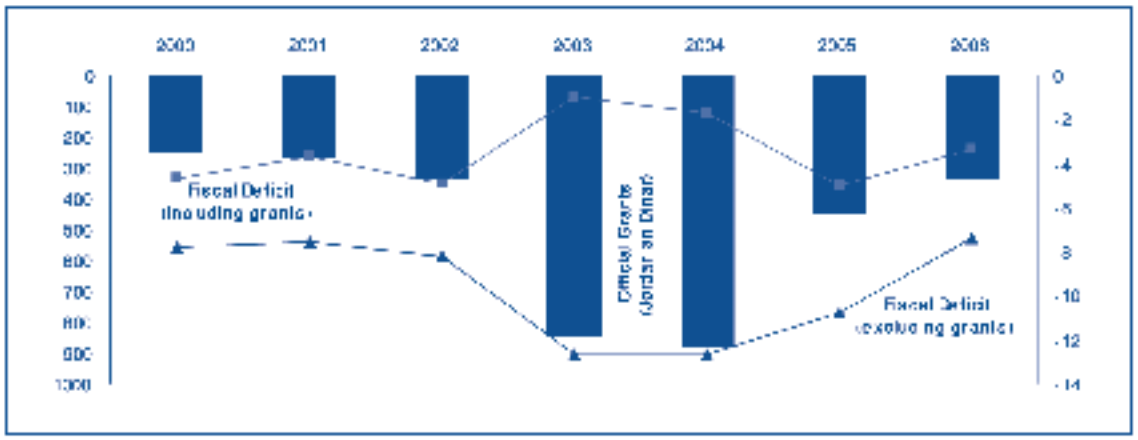


Source: Country Report- 2007, EIU

Fiscal Outlook

Though government expenditures comprise only a small component in Jordan's GDP, it is one of the main causes of concern for the country's macroeconomic outlook. The continuing trend of large fiscal deficits that has put tremendous pressure on the government's debt situation. In 2006, the fiscal deficit stood at 7.5% of GDP before grants (4.4% of GDP after grants). As illustrated below, aid inflows peaked in 2003, largely due to the Iraq war, and assisted in reducing the fiscal deficit. However, this foreign aid has since decreased. Although the fiscal deficit has been declining despite this contraction, Jordan needs a long-term solution for reducing its dependence on the flows of volatile foreign aid.

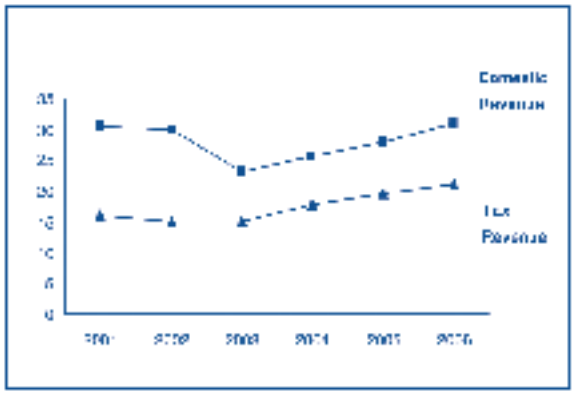
Figure 2.5 - Fiscal Deficit (with and without aid), External Aid Flows (JD mn)



Source: Country Report- [illegible] IMF Country Report, [illegible]

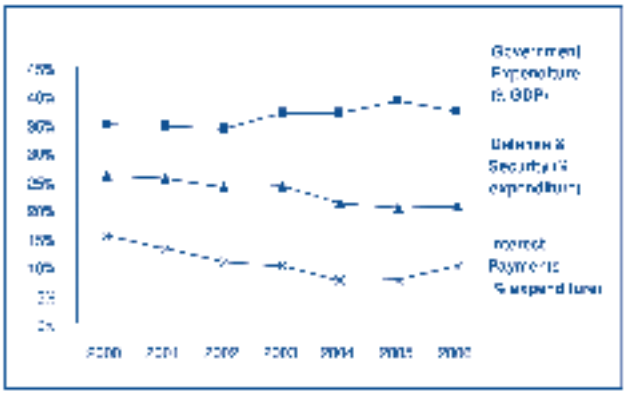
The decline in the fiscal deficit results from an increasing domestic revenue base and a strong control over government expenditure, illustrating the impact of the government's recent tax and public sector reforms. Domestic revenue, which grew at over 18% in 2006, is driven by high sales tax and income tax receipts. Despite improvements in curbing government expenditures, they continue to make up over 30% of GDP. Interest payments on debt constitute a significant portion of government expenditures, although the share has been decreasing. Defense and security expenditures continue to demand a large part of the budget - an obvious outcome of the regional instability. The recent increase in fuel prices has serious implications for Jordan's current account given the high sensitivity of the deficit to changes in oil prices - an increase of USD $1/barrel causes Jordan's expenditures to grow by JD 25 million.

Figure 2.6 - Rising Domestic Revenue & Tax Base (% GDP)



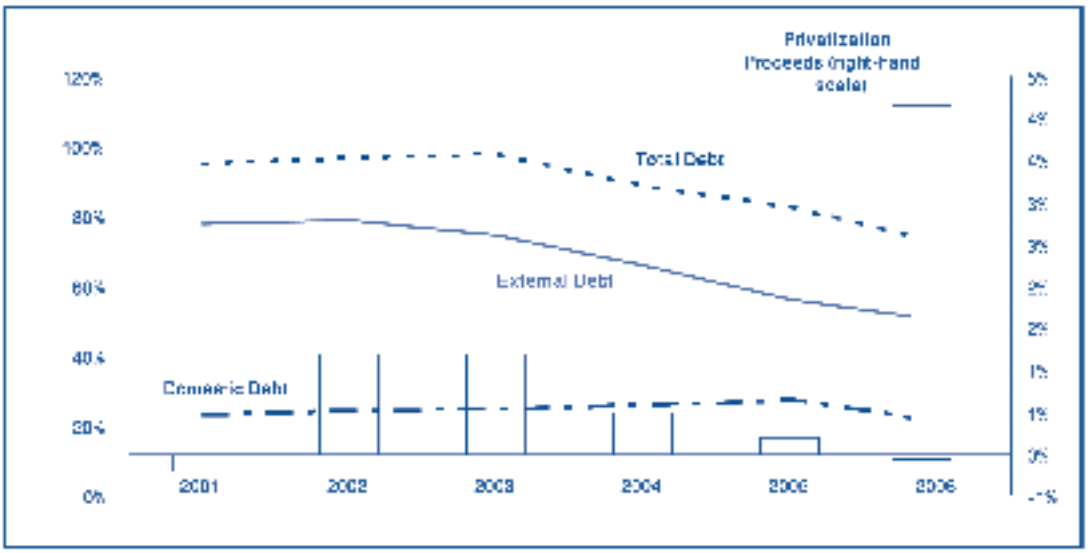
Source: Country Report- [illegible] IMF Country Report, [illegible]

Figure 2.7 - Trends in Govt Expenditure (% GDP), Major Components of Expenditure



Source: WDI 2007

Figure 2.8 - Declining Trends in Domestic and External Debt, Privatization Proceeds (% GDP)



Source: Country Report- 2007, E ..; IMF Country Repor.., 2007

FINANCING OF THE DEFICIT: Debt and Privatization Proceeds in Jordan

The reduction in the fiscal deficit has relieved the debt burden for Jordan somewhat. Total government debt stood at 72.5% of GDP in 2006; the government has established a goal of bringing down this debt to 60% of GDP by 2012 under the Medium Term Fiscal Framework. Increasingly, privatization proceeds recently have been assisting in financing the government's fiscal agenda.

The declining debt stock of the country has resulted in an improving debt service ratio which stood at 7.6% of GDP in 2006. Jordan has also been making an effort to finance an increasing part of the deficit through domestic debt to reduce its dependence on other-currency denominated debt: this is also necessitated by the winding down of its earlier debt schedule from bilateral sources[6] and the temporary nature of privatization proceeds on an annual basis.

Within its external debt profile, the government has also made an effort to put greater emphasis on multilateral and bilateral concessional loans rather than commercial debt. This has resulted in a decrease in the imputed interest rate on the debt stock. Further, due to improved balance of payment conditions and growing foreign exchange reserves, external debt servicing through foreign exchange receipts has almost halved from 16% in 2001 to about 8% in 2006.[7]

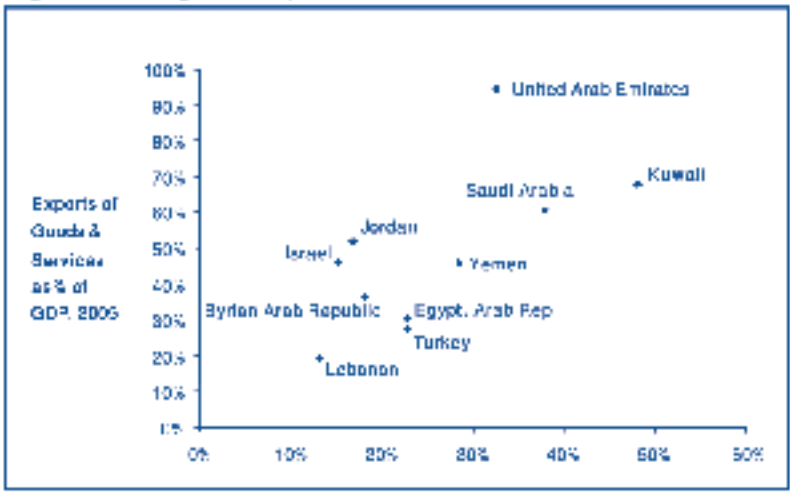
The Executive Privatization Commission (EPC) has been working on its projects of disinvestments of some major publicly owned organizations and recent divestitures have resulted in a sudden increase in privatization proceeds that have gone towards financing the deficit gap. However, as mentioned earlier, there is no guarantee that this program will continue at its current levels on a sustained basis.

[6] Such as the Paris Club debt
[7] Min of finance debt report

External Sector: Trade & Service Flows

Jordan's trade flow is fairly robust with growing exports and imports and very high remittances from the Jordanians working overseas - exports of goods and services contribute to 51% of GDP.[8] Jordan's trade and current account deficits have been increasing since 2003, with the onset of the Iraq war. The trade deficit stood at 35% of GDP in 2006, reflecting an ongoing widening gap that emerged in 2003 primarily as a result of a surge in imports in that year driven by increasing oil prices precipitated by the Iraq war.

Figure 2.9 - Regional Exports

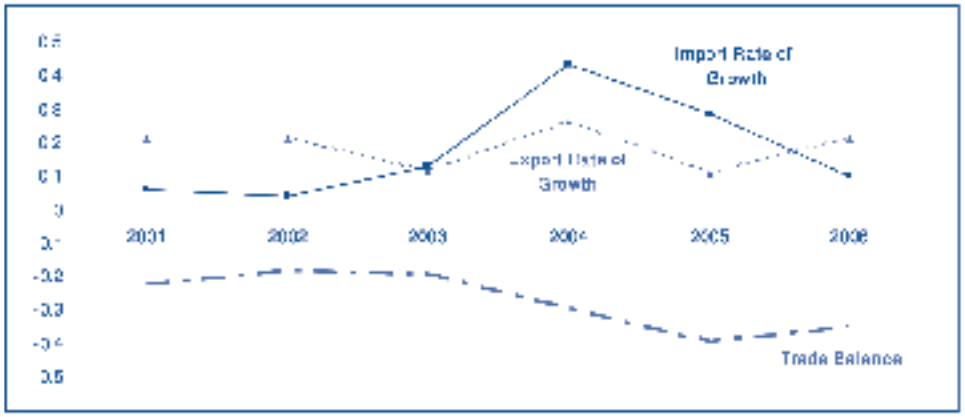


Source: World Bank 2007, JAA Calculations.

As oil accounts for a significant portion of Jordanian imports - about 24% in 2006 -, the country's trade balance is vulnerable to external shocks caused by volatility in oil prices. Iraq was a source of cheap oil for Jordan until the war disrupted this relationship. As Figure 2.10 illustrates, Jordan's economy is significantly more open than regional neighbors in terms of exports as a percentage of GDP; however, its export growth is merely average. This indicates the critical role service income plays in its foreign exchange receipts - which will be discussed later.

The trade balance has improved since 2005 with a decline in import growth rates and resurgence in exports largely due to the weakening of the dollar. While these trends may provide relief in the short term, structural shifts in the balance of trade remain necessary as devalued currency is neither sustainable, nor a component of true competitiveness.

Figure 2.10 - Trade Balance (% GDP), Rate of Growth of Exports & Imports

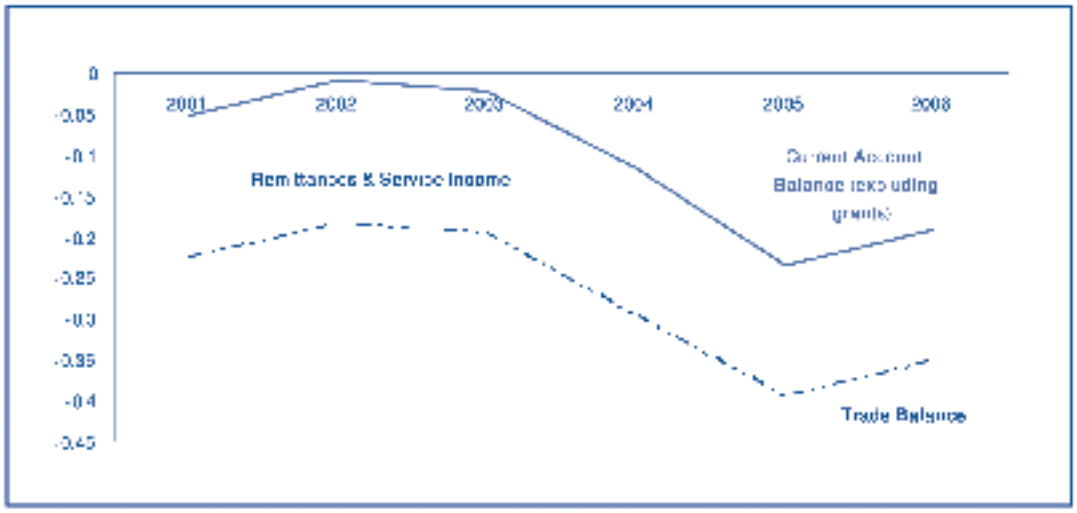


Source: Country Report- 2007, EIU, IMF Country Reports

[8] WDI 2007

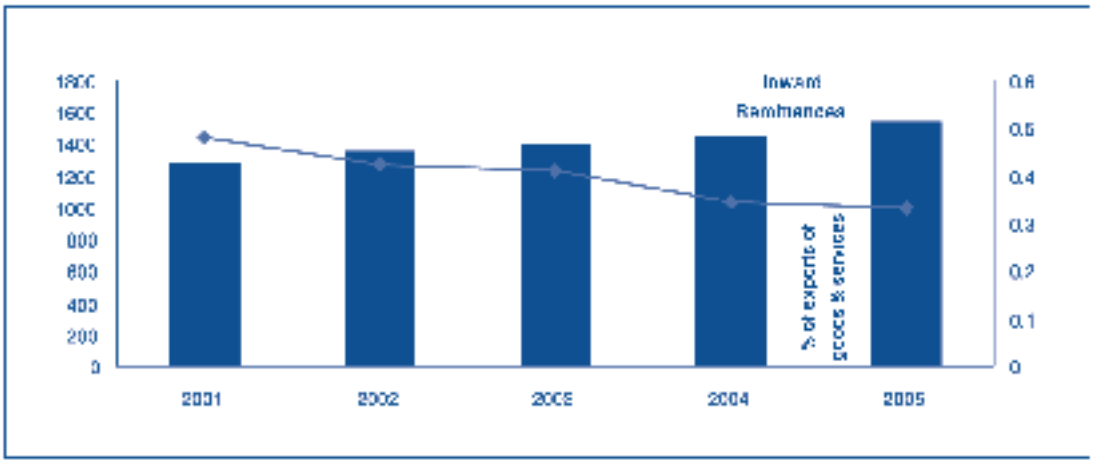
The overall current account balance (excluding official transfers) stood at a deficit of 19% in 2006 - the large trade deficit was partially offset by sustained high inward remittances from the Jordanian diaspora and service income receipts, primarily from the tourism sector.

Figure 2.11 - Current Account & Trade Deficits (% GDP)



Source: Country Report- 2007, EIU, IMF Country Report

Figure 2.12 - Inward Remittances (JD mn), % of Exports of Goods & Services



Source: Country Report- 2007, EIU, IMF Country Report

FINANCING OF THE DEFICIT: Foreign Direct Investment

Jordan's current account deficit was more than offset by FDI and other flows of capital - the country's foreign exchange reserves have been growing steadily. After measuring barely 1% of GDP in 2003, FDI flows surged and stood at 12% of GDP in 2005 - much higher than other countries in the region and well above the regional average. As a share of gross fixed capital formation, FDI accounted for around 50%.

Figure 2.13 The Role of Foreign Investment

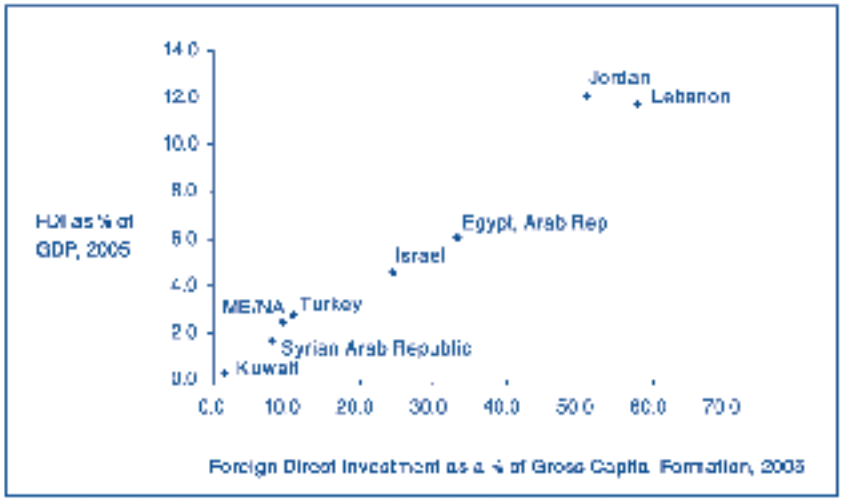
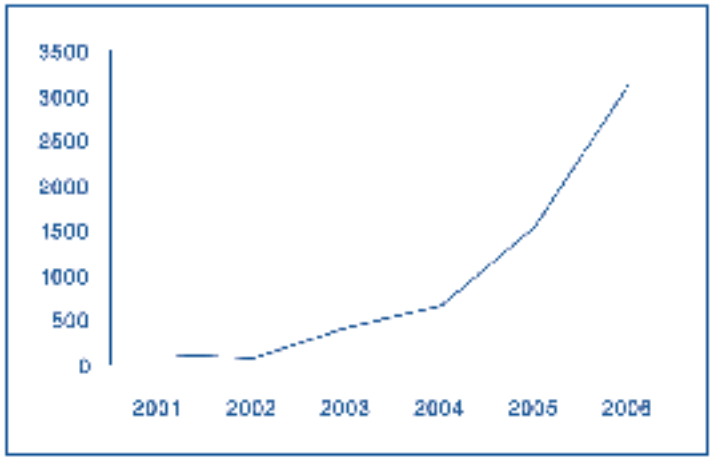


Figure 2.14 - FDI Flows (USD mn)



Source: World Bank 2007, JAA Calculations.

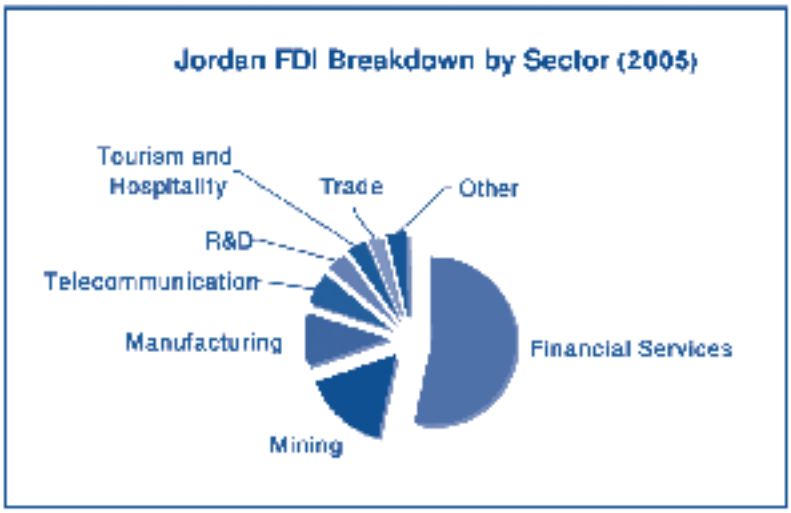
In terms of absolute flows in USD, Jordan's performance on FDI in comparison to the region has been average – USD $1.5 billion in 2005 as compared to USD $5.3 billion in Egypt or USD $9.8 billion in Turkey. FDI grew at a compound annual growth rate (CAGR) of 87% for 2003-2005 compared to other countries such as Egypt (375%) and Kuwait (310%). However, preliminary estimates show that the FDI flow in 2006 exceeded USD $3 billion - more than doubling in a year. However, significant questions have been raised on both the accuracy of the Jordan's current FDI data as well as the underlying reasons for its apparent growth.

No one consistent set of foreign investment figures can be used to accurately assess the performance and underlying drivers of foreign investment growth in Jordan. Different agencies are tracking different types of investment figures, causing confusion among policymakers and the public.[9]

Jordan's FDI growth certainly reflects the large increases in liquidity in the region, one off government privatizations in 2006, a real estate boom in Amman and Jordan's success in attracting increasing amounts of investment into the Special Economic Zones (SEZs).

One example of significant success has been the Aqaba Special Economic Zone (ASEZA) - established in 2001. So far, the zone has attracted over 1,500 new enterprises and a total investment of USD $1.5 billion in registered capital. An estimated USD $11 billion additional investment is forecasted for the period 2006-2014. [0] Despite specific successes in certain SEZs, much of Jordan's FDI still remains untrackable. A recent survey by the Department of Statistics of Jordanians residing overseas investing back in Jordan revealed that much of the inflow of expatriate investment is in non-productive sectors.

Figure 2.15 - Jordan FDI Breakdown by Sector (2005)



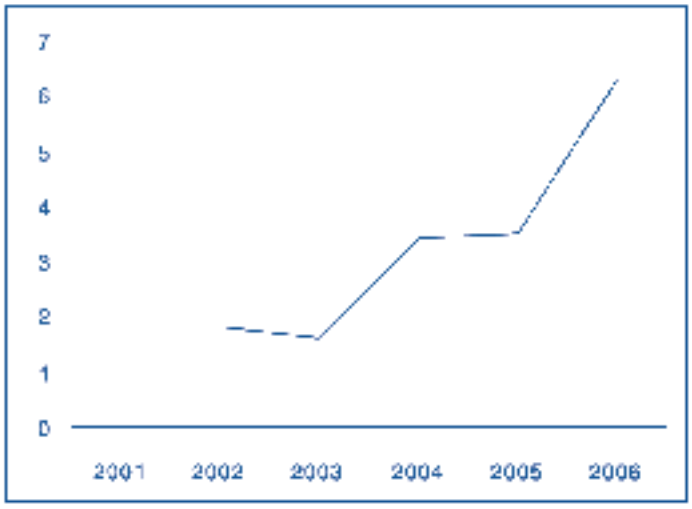
Source: Department of Statistics, Government of Jordan 2007

Monetary Policy & Banking Sector

As previously mentioned, the Jordanian government does not have complete flexibility in its monetary policy given the fixed peg of the dinar to the US dollar. However, the government has made a concerted effort through interest rate adjustments and open market operations to contain inflationary pressures that have arisen due to easy liquidity in the regional and domestic markets, high oil prices and the macroeconomic strain of absorbing large numbers of war refugees. Hence, while overall inflation rose in the last year to over 6%, this was primarily driven by food and fuel prices. Core inflation continued at the previous trend of around 2%. Interest rates closely follow the US interest rate trends and the yield curve has moved up over the past years.

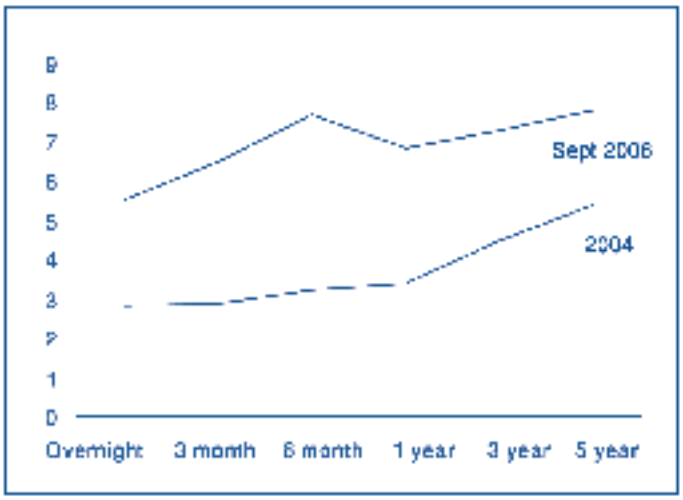
[9] Jordan Times, Yusuf Mansur Editorial, October 16, 2007.
[10] http://www.azem-aqaba.com
[11] Food prices were driven up due to increasing fuel prices that led to higher distribution and transportation costs. Another important reason has been increasing exports of Jordanian fruits & vegetables that have caused a domestic supply scarcity driving up the prices.

Figure 2.16 - Inflation Rate



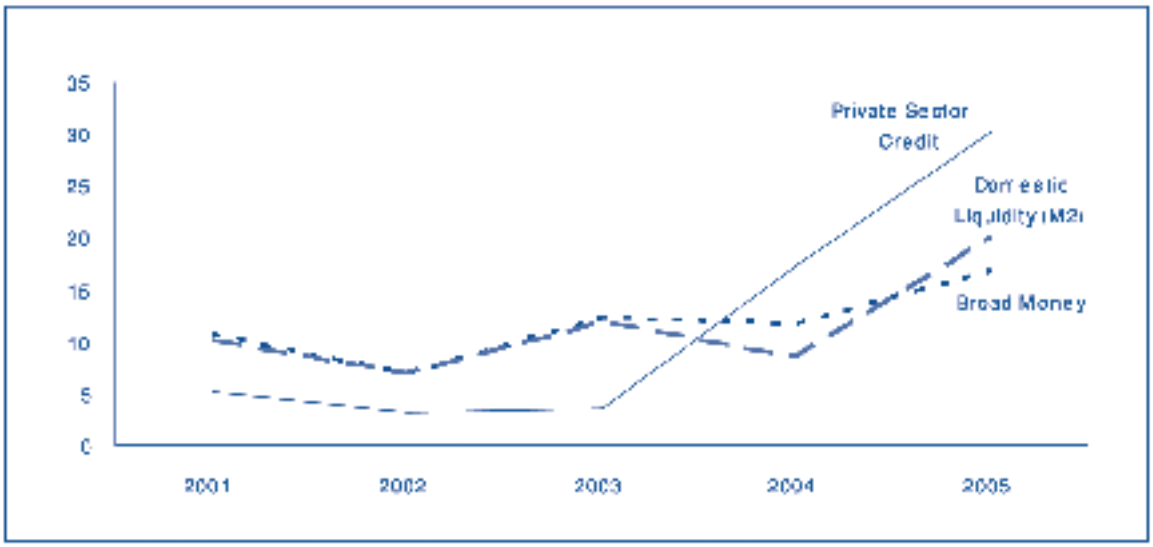
Source: Department of Statistics, Government of Jordan 2007

Figure 2.17 - Yield Curves



Source: World Bank 2007, JAA Calculations.

Figure 2.18 - Rates of Growth in Liquidity & Private Sector Credit



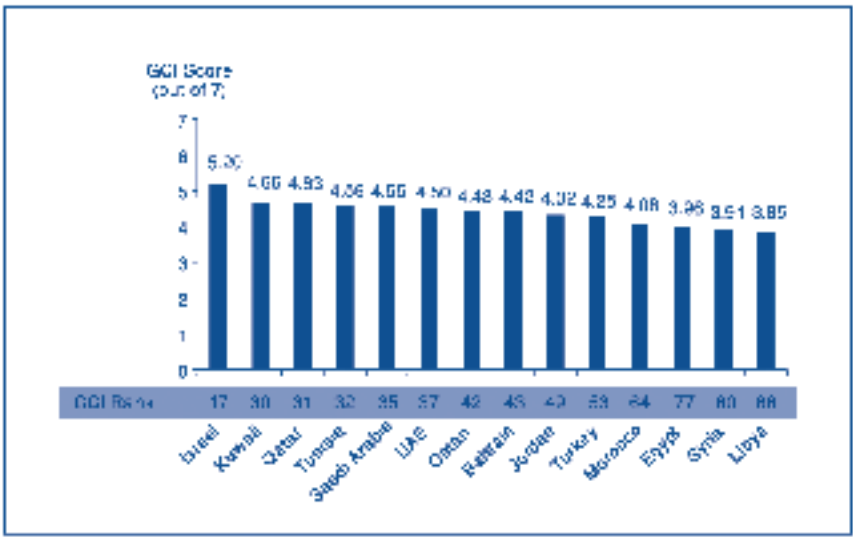
Source: IMF Country Reports, Central Bank of Jordan Statistics

Banking sector indicators reflect increasing stability (the capital adequacy ratio was 21.4 in 2006). This stability coupled with high liquidity has given rise to the availability of high amounts of credit to the private sector as well as the use of new and riskier lending instruments that will require greater supervision in the future.

MICROECONOMIC ENVIRONMENT

Jordan's Competitiveness Rankings: Jordan ranked 49th on the Global Competitiveness Index (GCI) and 48th on the Business Competitiveness Index (BCI) in the 2007-2008 Global Competitiveness Report. Jordan maintained its position in the top 50 competitive economies despite the inclusion of more countries in the report and increased focus on competitiveness across the world. Jordan's rank in the GCI remained unchanged while its rank in the BCI slipped slightly from 46th last year.

Figure 2.19 – Global Competitiveness Index Rankings - MENA



Source: GCR 2008

Despite placing in the top 50 competitive economies, Jordan ranked just 9th among MENA countries, ahead of North African countries such as Morocco (64th) and Egypt (77th), but behind the GCC countries, Tunisia (32nd), and Israel (17th).

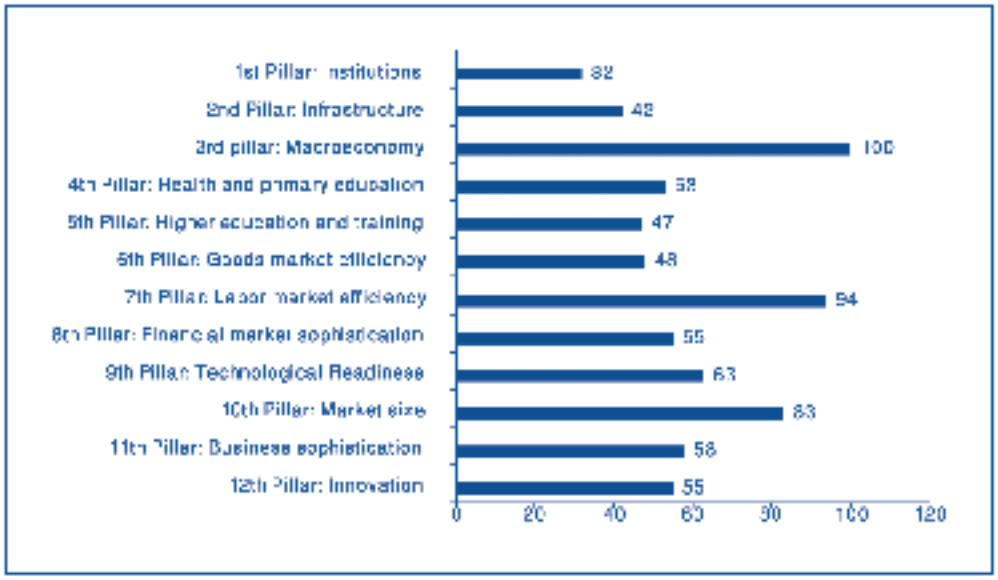
The GCI expanded its sub-components to 12 from 9. These subcomponents, or pillars, fall into 3 major groupings: basic requirements, efficiency enhancers and innovation and sophistication factors. These 12 pillars are:

1. Institutions
2. Infrastructure
3. Macroeconomy
4. Health and primary education
5. Higher education and training
6. Goods market efficiency (new)
7. Labor market efficiency (new)
8. Financial market sophistication (new)
9. Technological readiness
10. Market size (new)
11. Business sophistication and
12. Innovation

Figure 2.20 – Pillars of the Global Competitiveness Report

Source: GCR 2006

Figure 2.21 - Jordan's Performance on the Twelve Pillars of the Global Competitiveness Index, 2007 (a lower rank means better performance)



Source: GCR,2006

The GCI takes into account the fact that countries at different stages of development have different drivers of competitiveness. The stages of development are factor-driven, efficiency-driven and innovation-driven. Under this model, Jordan is characterized as a transition economy between factor-driven and efficiency-driven. At this stage, the GCR states that competitiveness is contingent upon a well-managed macroeconomic framework, strong institutions, adequate infrastructure and a capable workforce.

Jordan ranked comparatively well on institutions (32nd) and infrastructure (42nd). The strength of Jordan's institutions and infrastructure shone through in the results of the report and contributed to Jordan's maintenance of its top 50 position. Jordan's key competitive advantages under institutions include presence and protection of physical (29th) and intellectual (40th) property rights, light burden of government regulations (25th), ethical behavior of Jordanian firms (29th), prudent government management (35th) and judicial independence (40th). Jordan's strength in infrastructure is based on the quality of its road (37th) and air (36th) infrastructure as well as the quality of its electricity supply (34th).

However, Jordan's weaknesses in the macroeconomic environment (100th), labor market efficiency (94th) and market size (83rd) reduced its overall ranking. Similar to last year, Jordan's dismal score in the macroeconomic environment pulled back its overall rank. As indicated earlier, both Jordan's annual fiscal deficit (112th) and its government debt (105th) present an ongoing risk to the economy. Jordan's other especially low rankings appear in 2 of the new pillars, labor market efficiency and market size. Within the labor market efficiency pillar, Jordan's key weaknesses are in hiring and firing practices within the country (103rd), reliance on professional management (95th), its ability to retain the country's most talented workers (brain drain - 86th), and the female participation in the labor force where Jordan ranks just 124th out of 131 countries. This indicates that Jordan is missing out on a significant pool of educated workers and potential economic value. While there is quite a bit that can be done to improve its labor market efficiency, there is very little Jordan can do to directly improve its market size. By definition, Jordan is a small market. The only reasonable policy response is to ensure that Jordan's economy is as open as possible to the flow of goods and services and to support the regional and international market linkages for Jordan's export business.

In the areas of education and health, Jordan's rankings are at par with its overall ranking, but this conceals disturbing weaknesses in primary and secondary enrollment. Known for its strong education system, it is surprising to see Jordan's ranking in both primary enrollment (82nd) and secondary enrollment (62nd) appear as competitive disadvantages. As a barometer for Jordan's future workforce, these are 2 of the most urgent issues to address for Jordan. The good news in education is that Jordan ranks comparatively well in education expenditure (25th), quality of the higher education system (37th), quality of the math and science education (47th) and tertiary enrollment (48th).

Jordan's rank in the goods market efficiency pillar mask wide differences and inconsistencies in its ranking on specific indicators. There is significant disparity and inconsistency between the strengths and weaknesses in the assessment of Jordan's goods markets. Key strengths include the tax rate (21st), time required to start a business (25th), intensity of local competition (33rd), the extent of market dominance (31st) and the degree of customer orientation (36th). However, these strong scores are counter-weighted by equally poor scores in the trade-weighted tariff (83rd), extent and effect of taxation (73rd), number of procedures to start a business (85th) and the buyer sophistication within Jordan (92nd). These numbers reveal remarkable paradoxes in the Jordanian economy. The rank in overall tax rate in Jordan is impressively low, but the weak ranking on trade-weighted tariff reveals that Jordan may be constraining a key driver of future prosperity: trade. The time required to start a business indicates the efficiency with which the system works, especially when considering that the number of procedures is so comparatively high. The number of procedures is itself concerning as this can increase the direct cost for the business as well as opportunities for corruption in the process. The result on customer relations is troubling - Jordan's market appears to be well oriented to the needs of the customer, yet its access to sophisticated customers on which industry relies for feedback on product quality is limited.

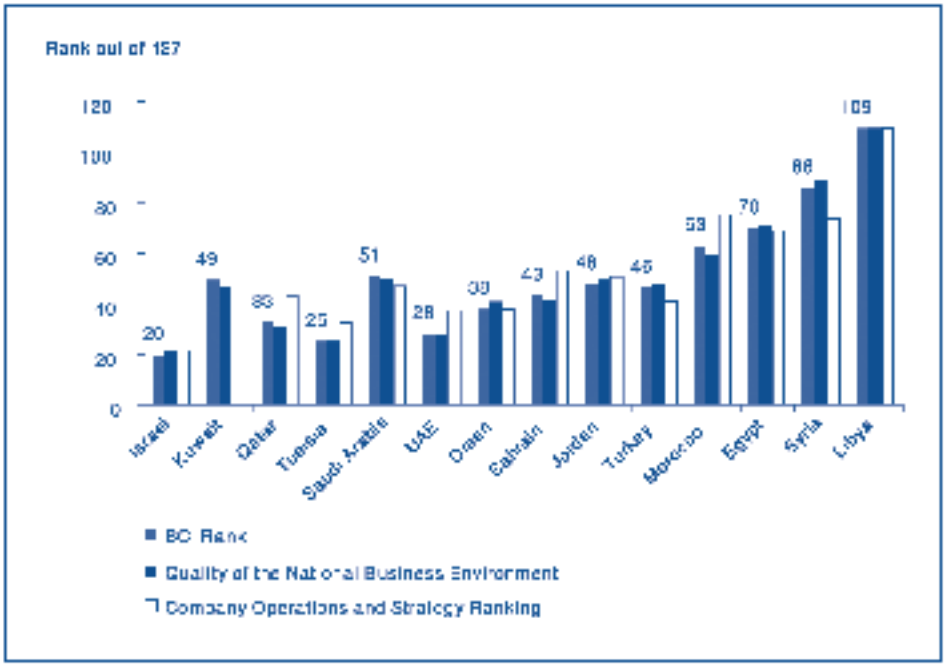
Business and financial market sophistication appears to be a moderate weakness for Jordan with only a few notable strengths and dramatic weaknesses. Jordan's financial market sophistication is buoyed by its comparatively strong local equity market (39th), but is significantly constrained by its weak ability to protect investors (87th). Under business sophistication, Jordan's one moderate strength is business' control of international distribution and its main weakness is the extent to which Jordanian businesses market their products and services (75th).

Despite increased focus and attention on Jordan's knowledge-driven sectors, Jordan's rankings in technological readiness and innovation reveal debilitating weaknesses countered by only a few strengths. Jordan has good access to the latest technologies (37th) and its firms have the absorptive capacity (42nd), but Jordan ranks low on its laws relating to IT. On innovation, Jordan is producing a strong pool of scientists and engineers (38th); however, company research spending (75th) and collaboration with universities (69th) is holding back the country's innovative capacity.

The Business Competitiveness Index[12]

Jordan ranks equally well on the Business Competitiveness Index (BCI) at 48th out of 127 total countries in the 2007 report, slipping 2 ranks overall from its 2006 ranking. However, when taking into consideration new country additions, Jordan stayed level on a percentile basis. Maintaining its top 50 ranking is impressive with the data pool now including nearly all highly developed economies. Jordan ranks behind UAE (28th), Qatar (33rd), Bahrain (43rd), and Turkey (46th), and above Saudi Arabia (51st), China (57th), and Egypt (70th).

Figure 2.22 - BCI Summary and Comparators for 2007



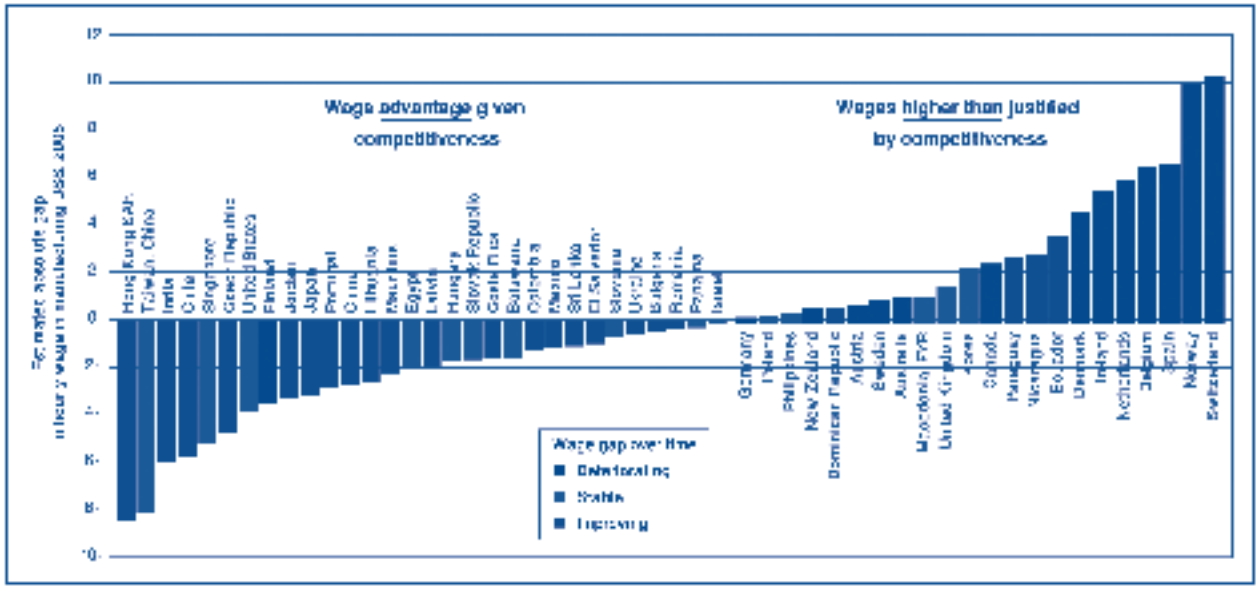
Source: GCR 2008

There are 2 components of the BCI and Jordan does relatively well on both. There is very little difference between the rankings for the quality of the national business environment (49th) and the rankings for company operations and strategy (51st). The relatively equal rankings demonstrate a balance in Jordan's economy. However, according to the BCI methodology, a much stronger weight is placed on the national business environment (over 80%) while the quality of business operations and strategy is weighted much less. This reflects how critical the business environment is to a country's competitiveness and the importance of Jordan continuing to take steps to further improve the business environment. The Jordan's performance in the BCI echoes much of the GCI conclusions: strong infrastructure, efficient legal framework, strong institutions; however, poor cellular connectivity, limited buyer sophistication, and weak marketing capabilities.

[12] The Business Competitiveness Index is the product of the Institute for Strategy and Competitiveness of Harvard Business School.

Jordan is highlighted in this years report for its good value as an investment location. The graph below compares countries where wages are higher than would be expected based on their competitiveness to countries where wages ought to be higher based on the performance of their economy. Jordan and the countries to the left of the graph have a "wage advantage." It is interesting to note that Jordan is in good company with some of the most dynamic economies in the world; also appearing on the left of the graph are India, China, Chile, Singapore, Czech Republic, USA and Finland.

Figure 2.24 – Wages vs. Competitiveness



Source: Porter, Michael and Christian Ketels. Global Competitiveness Report 2006

World Bank Doing Business 2008

Similar to the Global Competitiveness Report, the World Bank's Doing Business Report has emerged over the past 4 years as an authoritative, objective snapshot of how easy it is for businesses to conduct business in a given country. The report has a more limited scope than the Global Competitiveness Report - focusing on the regulatory environment for doing business.

Despite continuous discussion about reform in the regulatory environment for business in many sectors and at a variety of levels, in the last year Jordan's ranking across the 'Doing Business' indicators remained largely stationary and the overall ease of doing business rank actually dropped a point from 79 to 80. This placed Jordan slightly above Lebanon (85) and not far behind UAE (68). Other regional competitors, Egypt and Saudi Arabia, were both named top reformers for 2007 while Jordan only passed one reform this past year.

Table 2.3 - World Bank Doing Business 2007 Selected Indicators: Jordan and Benchmarks

		Jordan	Egypt	Lebanon	UAE	USA	Switzerland	Ireland	Malaysia	OECD	MENA
Getting Credit	Strength of Legal Rights Index (0-10)	5	1	4	3	7	6	0	0	6.4	3.7
	Depth of Credit Information Index (0-6)	2	4	5	2	6	5	5	6	4.6	2.6
Paying Taxes	Payments (Number)	26	56	19	14	10	24	8	35	15.1	25.1
	Time (Hours Per Year)	101	711	180	12	325	63	76	168	183.3	239.8
	Total Tax Payable (% of Gross Profit)	15.1	13.2	11.4	0	27.1	6.4	14.2	19.1	20	14.7
Starting a Business	Procedures to Start a Business (Number)	10	7	6	11	6	6	4	9	6	9.7
	Time to Start a Business (Days)	14	8	46	62	6	20	13	30	14.9	38.5
	Cost to Start a Business (% GNI)	66.2	28.6	94.1	36.9	0.7	2.1	0.2	18.1	5.1	66
	Min. Capital (% GNI per capita)	795.4	7	60.4	312.4	0	13.9	0	0	32.5	487.7
Dealing with Licenses	Procedures to Obtain a License (Number)	16	26	20	21	19	14	11	25	14	19.4
	Time to Obtain a License (Days)	122	240	211	125	40	154	185	265	153.3	201.4
	Cost to Obtain a License	488.1	474.9	228.5	1.5	13.4	52.7	19.6	10	62.2	445.7
Registering Property	Procedures to Register Property (Number)	8	7	8	8	4	4	6	6	4.9	6.8
	Time to Register Property (Days)	22	193	25	6	12	16	38	141	28	48.1
	Cost to Register Property	10	1	6.9	2	0.5	0.4	10.2	2.4	4.6	6.6
Employing Workers	Difficulty of Hiring	11	0	44	0	0	0	11	0	25.2	25.9
	Difficulty of Firing	60	60	30	0	0	10	20	30	27.9	31.2
	Rigidity of Employment Index	80	27	25	20	0	17	17	10	30.8	33.1
Protecting Investors	Disclosure Index	5	7	9	4	7	0	10	10	6.4	5.6
	Investor Protection Index	4.8	5	5	4.3	8.8	5	8.8	8.7	6	4.7
Contract Enforcement	Procedures	39	42	37	50	32	32	30	30	31.3	43.5
	Duration	689	1010	721	607	300	417	515	600	443.3	699
	Cost	31.2	25.3	30.8	26.2	9.4	21.2	26.9	27.5	17.7	24

In the country rankings (not shown in the table) Jordan ranks higher than average in the categories of paying taxes (19), trading across borders (59), employing workers (45) and dealing with licenses (71). Despite respectable performance in these areas, Jordan has not shown improvement as nearly all the indicators associated with employing workers, paying taxes and dealing with licenses remain exactly at 2003 levels and the indicators associated with trading across borders can only boast a very modest improvement in cost and time which was not strong enough to counter a drop of 8 points in the ranking.

Despite this stagnation there have been some modest improvements over the past several years. Since 2003, 4 procedures to start a business were eliminated and associated costs were significantly reduced from 81 days and 104.1% of per capita income to only 14 days and 66.2%. Moreover, the cost associated with obtaining a license decreased more than 16% since 2005.

Table 2.4 – Jordan's ranking in Doing Business 2008

Rank	Doing Business 2008
Ease of Doing Business	80
Starting a Business	133
Dealing with Licenses	71
Employing Workers	45
Registering Property	109
Getting Credit	84
Protecting Investors	107
Paying Taxes	19
Trading Across Borders	59
Enforcing Contracts	128
Closing a Business	87

That being said, Jordan lags behind its competitors in the areas of protecting investors (107th), registering property (109th), enforcing contracts (128th) and starting a business (133rd).

The closing a business rank dropped 3 points in last year while the areas of protecting investors and registering property saw no change in actual indicators their rankings dropped 2 and 3 points respectively in the past year. Enforcing contracts saw no change.

This stagnation represents a serious challenge to Jordan's economic competitiveness as competition is increasing to attract FDI and other forms of investment. This competition is particularly apparent in the status of Egypt and Saudi Arabia as top reformers in 2008.

Egypt's deep reforms greatly improved its position in the ease of doing business rankings by reducing the capital required to start a business from EGP 50,000 to just EGP 1,000 while cutting the time and cost of start-up in half. Moreover, the Egyptian government established a one-stop shop at ports helping to reduce the time to import and export by 7 and 5 days respectively. Other reforms streamlined bureaucracy associated with construction, reduced fees for registering property and facilitated access to credit.

Saudi Arabia ranked 7th in the list of top reformers by eliminating the minimum capital requirement and more than halving the number of days for company start-up. It also reduced the number of documents required for importing, further reducing the time required for import and export by 2 days.

COMPETITIVENESS OBSERVATORY INDUSTRY SURVEYS: AGGREGATE RESULTS

From July to September of 2007, the Competitiveness Observatory conducted industry surveys of 210 industry leaders across the 5 sectors described in detail below. These surveys resembled the GCR surveys, but were customized by sector to uncover sector-specific constraints in the business environment. The results of the surveys are revealing at both the sector level (detailed below) as well as at the aggregate level. Echoing the GCR results, over 60% of survey respondents highlighted tax rates and regulations and a poor work ethic in the national labor force as the most problematic factors for doing business. Over 50% of respondents cited policy instability and inefficient government bureaucracy as key constraints to doing business. Just 14% of respondents highlighted crime and theft as problematic in Jordan.

When asked to indicate the particular advantages of being based in Jordan, 83% of survey respondents across the 5 industries cited political stability as a key advantage. The availability and cost of labor was chosen by nearly 60% of the respondents, follow closely by (surprisingly given the GCR results) the access to market 51% and infrastructure 49%. Just one third of businesses highlighted the regulatory environment as an advantage, and, despite its comparatively low tax rate, only 10% of respondents chose the tax rate as a particular advantage to being based in Jordan.

SECTOR ASSESSMENTS

The following 5 chapters assess the competitiveness of 5 sectors in Jordan: pharmaceuticals, information technology, tourism, medical tourism, and higher education. These assessments serve 2 purposes. First, the assessments provide an in-depth analysis of the competitiveness of the sector, including market trends, recent performance, benchmarking, and a review of the sector-specific business environment highlighting the key constraints to sector growth. The assessment of the business environment uses the Porter Competitiveness Diamond as an analytical framework. Second, the results of the assessments, when aggregated, provide a "bottom-up" cross-industry perspective of the common themes and constraints to growth of the private sector in Jordan.

These assessments are based on the most recent and reliable information available from national, regional and international sources. The main sources of data and information that have been used for these assessments are:

- Jordan specific statistics and analysis compiled in the past 5 years
- Sector-specific surveys with 85 questions per sector covering sector leaders views on (213 collected across 5 sectors):
    - Sector performance and competitor comparisons
    - Sector costs: materials, labor
    - Workforce: training, brain drain
    - Standards: licensing, accreditation
    - Marketing: sector-wide, and firm specific
    - Public-private collaboration

- Regional and international benchmarking based on:
    - International industry reports
    - Publicly available sector-specific data from each benchmark country
    - Interviews with industry representatives from benchmark countries

Sector Selection

The initial selection of the 5 sectors spotlighted in this report was based on 4 critieria:

1. Current performance and importance to the Jordan economy: output, employment and export values.
2. Potential future importance: growth in the performance indicators and growth in investment.
3. Strategic importance and/or need for information to inform public discourse: presence of important in dustry-government initiatives, public interest in the current state or potential for the sector, other political and economic circumstances may call for specific spotlights on the industry.
4. Ability to monitor progress: number and openness of firms in the industry, presence of a cluster, availability of information.

Based on the criteria, the 5 sectors were selected as pilot sectors for the Observatory to analyze. It is intended that the Observatory will expand its work to other sectors in the near future.

Regional and International Benchmarking

In order to get a fully institutionalized system for benchmarking and monitoring the competitiveness and performance of the 5 key Jordanian sectors, a thorough benchmarking exercise was carried out for the relative regional and international peer sets. The benchmark countries considered in this report are listed below. These benchmark countries were selected based on the performance of the sector (size and growth), as well as the potential for unique lessons for Jordan. For instance, while Qatar has a very small higher education system, the establishment of its Education City is an important benchmark for Jordan to track.

The benchmarking exercise aimed at allowing cross-country comparisons within various sectors to monitor the performance of each sector in a systematic manner. The set of indicators included all the underlying determinants of competitiveness, namely: measures of performance (inc. exports, productivity, etc.), factor conditions, demand conditions, context for strategy and rivalry, and related and supporting industries. Ultimately, through benchmarking Jordan's competitive advantages and disadvantages to the Arab region and worldwide by key indicators, this would enable the observatory to highlight opportunities and gaps within the Jordanian economy at the sector-level.

Regional and International Benchmarking

Pharmaceuticals	• Turkey • UAE • Israel	• Switzerland • India • Canada
Medical Tourism	• Lebanon • Egypt • Saudi Arabia	• Costa Rica • Thailand • Singapore & India
IT	• Egypt • UAE	• India • UK / USA • Singapore
Tourism	• Turkey • UAE • Egypt	• Italy • Malaysia • Switzerland
Higher Education	• Egypt • Lebanon • Qatar	• UK • US • Sweden

Part II: Competitive Position of Key Industries in Jordan

Pharmaceuticals

PHARMACEUTICALS

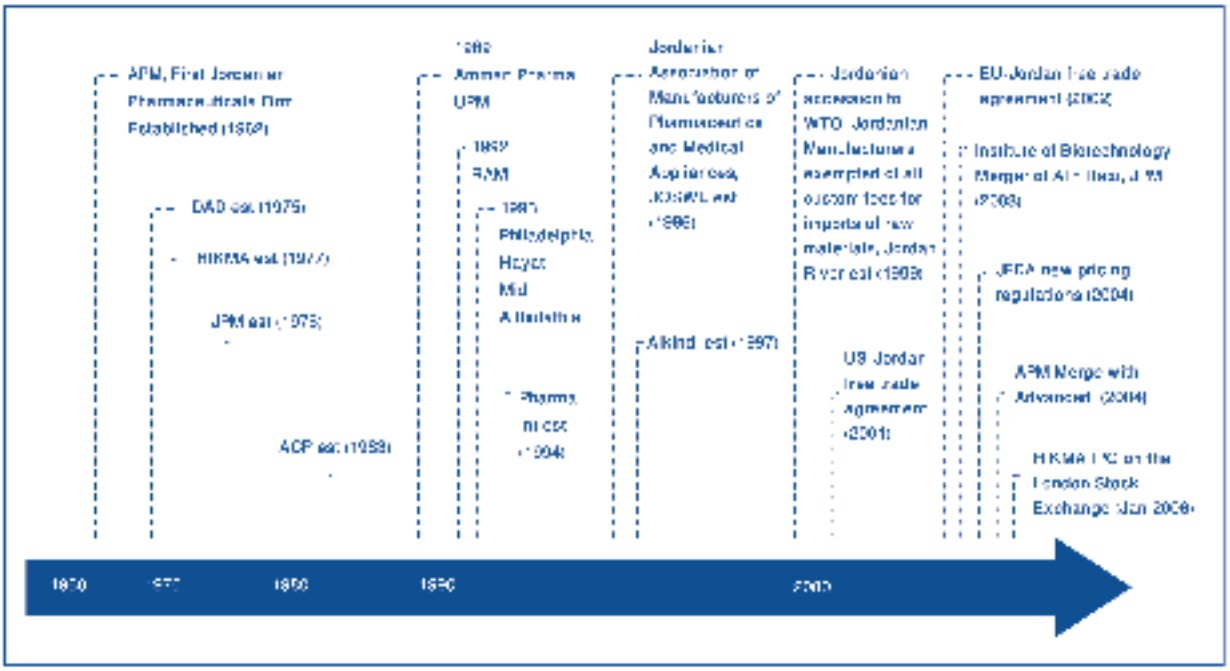
1. HISTORY AND CONTEXT

The pharmaceuticals industry represented 7.18%[13] of Jordan's export base. Pharmaceutical production in 2006 valued over USD $450 million, of which USD $295 million were exports, a nearly 6-fold increase in production from 1990 (USD $77 million). Historically, production has been concentrated in generic pharmaceuticals. Around 3%[14] of the production was manufactured under license which had started about twenty three years ago. Jordanian pharmaceuticals are registered in over 60 countries including North America and Europe. With nearly 75% of production destined for export markets, the industry is well aligned to the latest international market standards. However, despite the industry's geographic reach, 80% of exports are sold in the Middle East region, heavily Saudi Arabia and Algeria. Jordanian products claim nearly 30% share of the domestic market, indicating the diversity and variety of the product base. The product portfolio of Jordanian firms includes solids, semi-solids, liquids, aerosols and injectables. Manufacturers employ 4476 people directly, with the broader industry employing an estimated 8000 people.

KEY FIGURES:

- **Total production valued over $450 million in 2006**
- **75% of production is exported, 80% of which stays in the Middle East**
- **Jordanian pharmaceuticals registerd in over 60 countries**
- **Industry employs 4,000 profes sional/technical staff out of 8,000 total employees.**

Figure 3.1 - Timeline for the Jordan Pharmaceuticals Industry



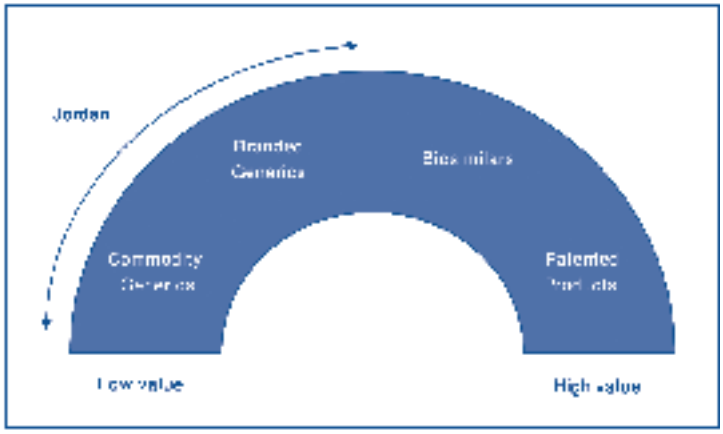
[13] Department of statistics, MOPIC, GOJ.

[14] (Jordan Times Monday, June 18, 2001, Pharmaceutical industry needs to increase mergers and consolidation, enhancing marketing strategies-A report by the Export and Finance Bank), currently 97% is in branded generics and 3% is produced under licensing agreements

The industry was launched in 1962, with the establishment of the first Jordanian pharmaceuticals company, which operated alone until the mid 1970's. Between the mid-1970s until 1990, the manufacturing base expanded to 6 manufacturers. During the 1990s the industry experienced significant expansion due to pre-WTO accession favorable trade conditions eventually hosting 17 manufacturing companies. Accession to the WTO in 2000 triggered a substantial shift in the competitive environment and industry structure. Its a fact that, Jordanian firms shared common product portfolios and focused on the same markets with some competitive. advantages of each firm yet enforcement of international standards had been noticed even before the accession to W to. The accession and subsequent erosion of Jordan's favorable trade status in numerous markets combined with a more competitive environment has led to consolidation in the industry, which now numbers a diverse set of 17 manufacturers with a varied set of domestic, regional and global operations.

Despite substantial changes in trade relations, the regulatory environment, and sporadic regional conflicts, the industry has grown significantly in both size and importance to the Jordanian economy. Since the early 1990s, exports have grown four-fold to USD $300 million in 2006. [5] The long-run underlying health of the industry can be attributed to the strong Jordanian education and health systems that underpin the competitiveness of the pharmaceuticals sector.

Figure 3.2 – Pharmaceutical Product Spectrum



Pharmaceuticals vs Biotechnology

The pharmaceuticals and biotechnology industry have developed and historically been viewed as distinct and separate industries. Pharmaceutical firms, largely staffed by chemists, have focused on small molecule, synthetic medicinal treatments. Biotechnology firms, staffed by biologists and biomedical engineers, have focused on genetically engineered large molecule proteins for therapeutic purposes. However, in the past 5 years, the two industries have begun to converge. Increasingly, pharmaceuticals and biotech companies are working together. As the global drug market slows, pharmaceutical companies are turning to biotechnology for future growth prospects.

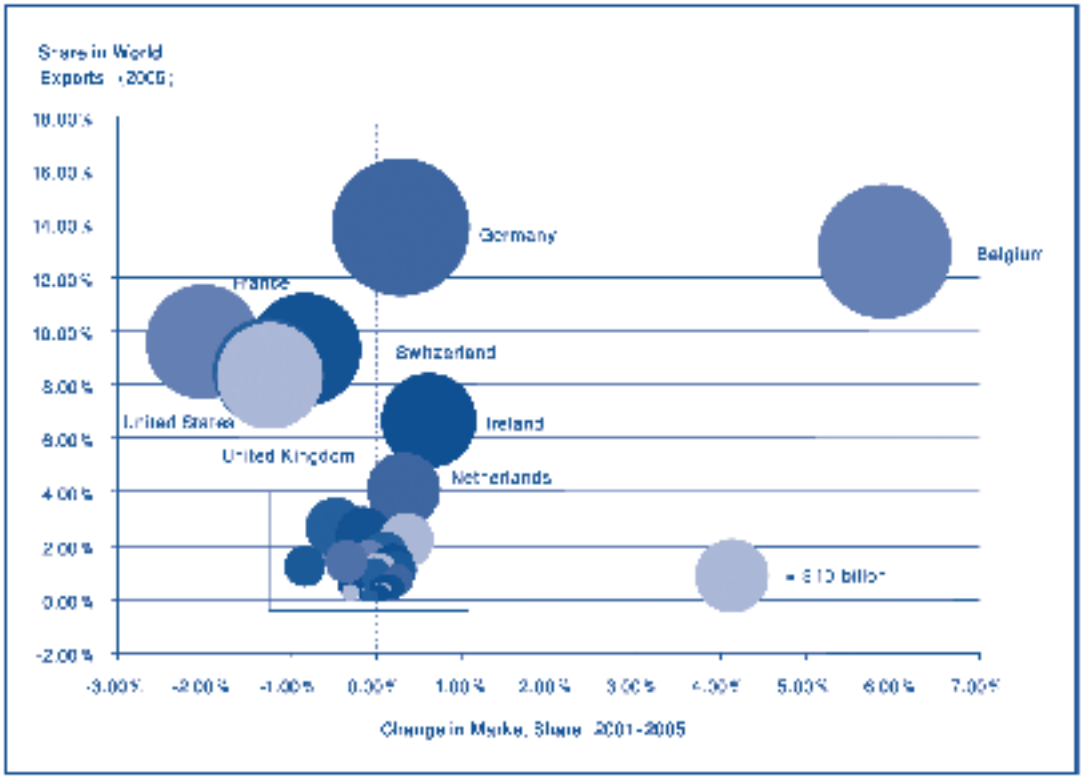
The maturity of the pharmaceuticals business model, and the chemical replicability of the product lines, has led to a further segmentation in pharmaceuticals amongst commodity generics, branded generics, and patented drugs. As patents for specific drugs expire, generic companies are able to produce and sell these drugs and even develop their own branded generic drugs, which can increase the value of the product. In contrast, to date very few biologics have transitioned to generic producers. Longer patent lives, complex manufacturing processes, and no clear regulatory pathway for receiving approval of generic biologics have all contributed significant barriers to generics manufacturers.

[15] Department of Statistics, Ministry of Planning and International Cooperation, Government of Jordan

Recognizing the market shift presented by the convergence of biotech and pharmaceuticals manufacturing, Jordan has established an Institute of Biotechnology aimed at developing biotechnology capabilities to complement its mature capabilities in pharmaceuticals. Specifically, the Institute is charged with evaluating and identifying institutional capabilities in biotechnology across Jordan. In addition, the Institute will promote, coordinate and develop activities that are focused in biotechnology. This is expected to provide direct support for applied scientific research in biotechnology, increased numbers of patents and overall innovation in biotechnology in Jordan and in the end, the fostering of Jordanian biotech businesses. One such business has been formed already. MONOJO is a private sector research firm specialized in the development, production, and marketing of cell lines and antibodies to hospitals, laboratories, blood banks, biotech firms and research institutions. It was formally established in February 2005 as a partnership between several key private and public sector scientific research institutes including: the Jordan Higher Council for Science and Technology, The National Biotechnology Center, the Jordan Royal Scientific Society, Jordan University of Science and Technology, Philadelphia Private University, private investors and academic scientists.

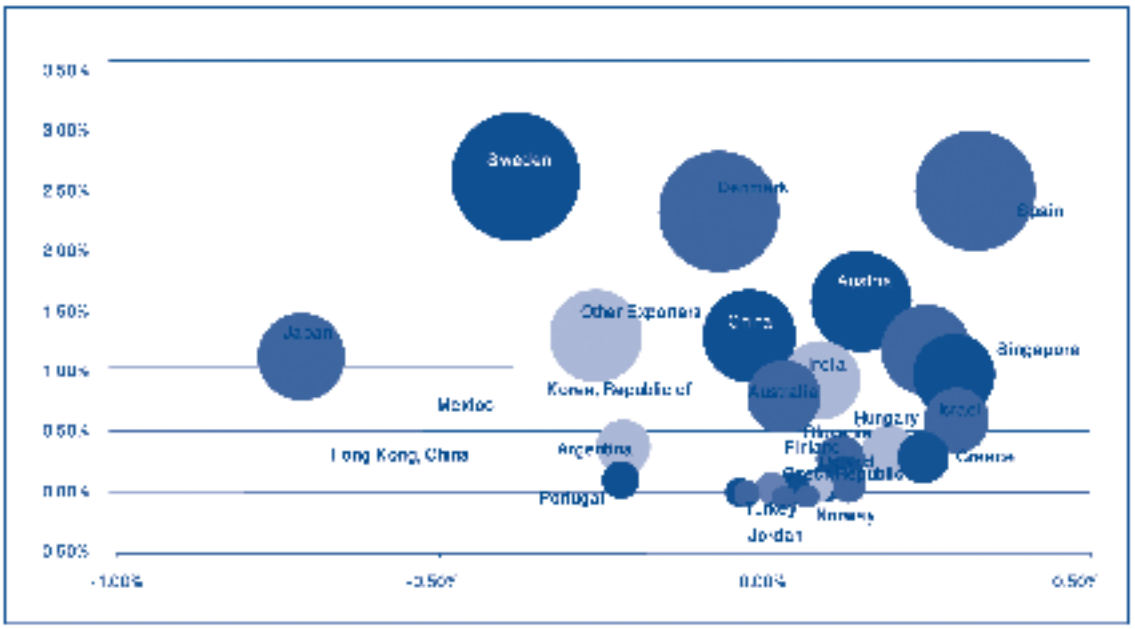
2. Regional and International Market Trends

Figure 3.3 - Global Pharmaceuticals Exports, 2005



Source: WTO Trade statistics

Figure 3.4 - Global Pharmaceuticals Exports, 2005



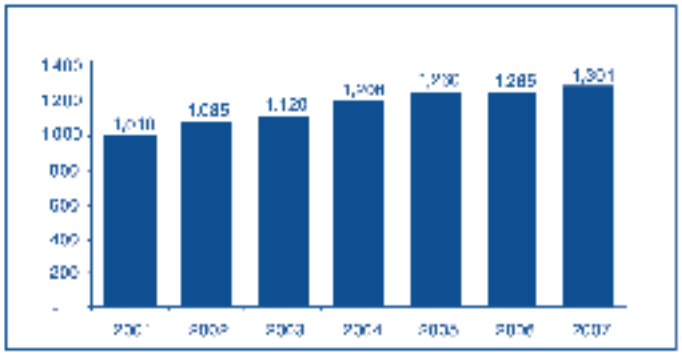
Source: WTO Trade Stats

Global spending on pharmaceuticals totaled over USD $600 billion in 2006, with cross-border trade totaling nearly USD $300 billion. The two charts above illustrate the current proliferation of pharmaceuticals trade. According to the WTO, in 2005 over 52 countries registered exports of USD $100 million or more and 98 countries register at least some exports. At the firm level, the global pharmaceuticals industry is equally as fragmented with the largest multinational companies still only holding single digit market share worldwide.

At USD $252 billion, the United States represented 42% of the world share in consumption, the largest single market in the world. [6] Europe represents 28% of the global market and Asia-Pacific represents 18% of the market. According to the Generic Pharmaceutical Association, generic drugs accounted for 56% of drug sales in the United States in 2005, up from just 20% in 1984, and are expected to climb even higher to 60% by this year with the establishment of the Medicare drug benefit. [7] In Europe, generic penetration rates are much lower, with rates estimated at 10% in both Spain and France. However, with increasing focus on the cost of medication, European countries are introducing policies and regulations to make it easier for healthcare providers to prescribe generic drugs. For example, France has published clinical guidelines recommending the use of generics and a quarterly database of approved generics. Similar trends are evident in Asia-Pacific as well. In Japan, physicians will be able to check a box on the prescription indicating when it is acceptable to substitute a generic drug for a branded drug. [8] Smaller, but high-growth emerging markets, including China, Russia, South Korea and Mexico, grew 81% over 2004. Markets in Africa and the former Soviet Union are also experiencing high rates of growth. These markets are expected to continue to be the engines of growth in the global market.

[16] IMS Health and Forbes.com
[17] DATAMONITOR, "Generics will play an increasingly important role in the pharma industry," Market Outlook Series, September 2006.
[18] DATAMONITOR, "Generics will play an increasingly important role in the pharma industry," Market Outlook Series, September 2006.

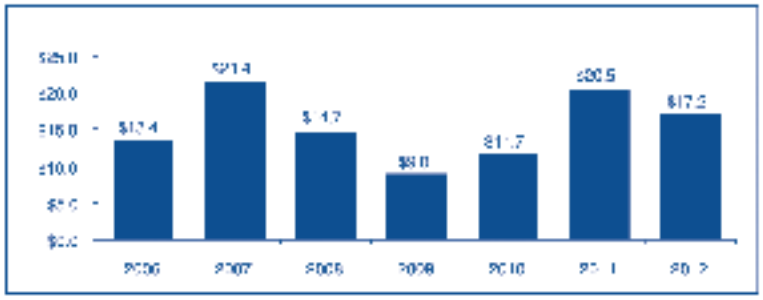
Figure 3.5 - Total Number of Pipeline Products



Source: Cowen and Co. Pharmaceuticals Review, 2007

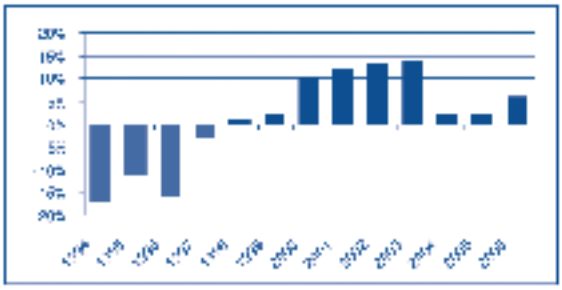
After averaging 9% growth annually since 1990, sales growth of the major pharmaceutical companies is projected to slow to 3-5% over the next 6 years. [9] However, since 2003 alone, the number of 'blockbluster' drugs on the market (drugs with global revenues in excess of USD $1 billion per year) has increased from 36 products to 50 products.[20] In addition, despite a common worry among industry analysts that the pipelines of the large pharmaceutical companies are weakening or even drying up, Figure 3.5 shows that there are actually record numbers of new products under development with the collective pipeline of the major pharmaceutical companies expanding by nearly 30% since 2001, and expected industry sales of current pipeline drugs are nearly double the comparable value in 1997.[2]

Figure 3.6 - US Sales of Drugs Potentially at Risk to Generics ($B) (2006-2012)



Source: Cowen and Co. Pharmaceuticals Review, 2007

Figure 3.7 - Generic Drug Pricing Trend (% change from one year ago)



Source: Cowen and Co. Pharmaceuticals Review, 2007

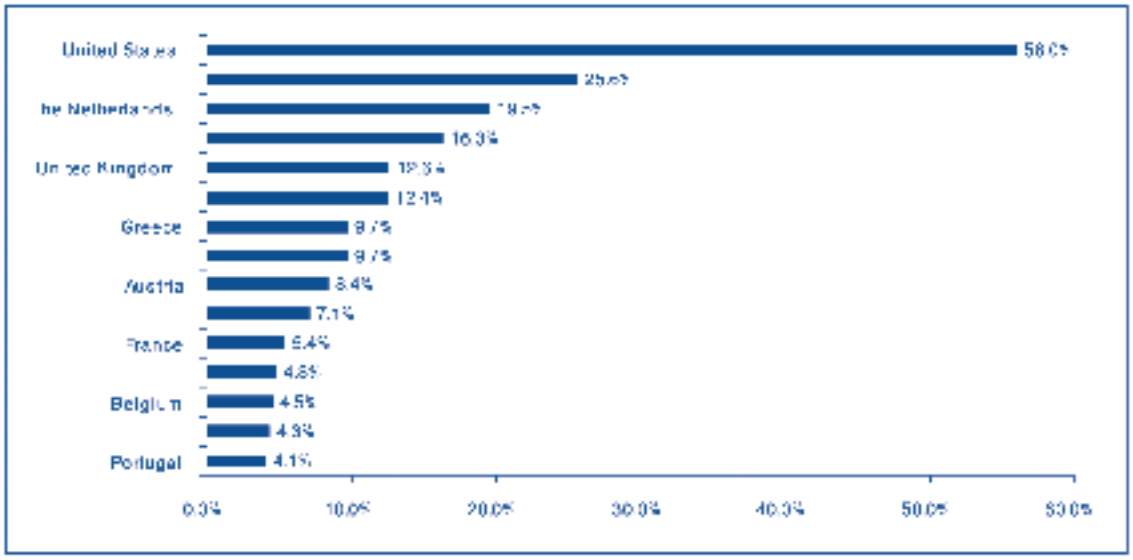
[19] Cowen and Company, Pharmaceuticals Analyst Report, March 2007.
[20] Moody's Investors Service, "US Pharmaceutical Industry Outlook and Updated Rating Methodology Data," April 2007.
[21] Cowen and Company, Pharmaceuticals Analyst Report, March 2007. Top new drugs expected in 2007 based 2011 sales potential compared to new drugs of 1997 projected 2001 sales potential

Generic drug manufacturers' sales projections are closely tied to the expiration of patents for branded drugs. Over the next 6 years, significant volume and value of patented drugs are projected to be at risk from expiration, with 2007 projected to be the peak of a wave with the next wave peaking in 2011.[22] Because of near-term patent expirations and long-term strength of the pipeline, generic drug sales are expected to be strong for the short and medium-term, with 2007-2008 and 2011-2012 expected to be strong years.

Yet, even as the use of generics is expected to grow in US and Europe, increased global competition and severe pressure from governments to lower prices are squeezing margins. In France, generics pricing is in the process of being squeezed from a 28% discount to the branded product down to 50% price discount.[23] Following a rise in average generic pricing in the US from 1999-2003, pricing growth is projected to slow to a modest 1-4% over the next 3-4 years[24]

The rate of substitution of generic drugs for branded drugs has steadily increased over the past 5 years and is expected to continue to rise with the increased expiration of patents and the cost pressures in the market.[25] Ever-rising medical costs in the US, Canada and Europe are triggering public pressure to reduce the cost of drugs. As a result, consumers and their healthcare providers (public and/or private) are increasingly looking to generic drugs and low-cost providers to supply drugs to their populations. However, with heightened concern over the efficacy and safety of international supply chains, drug importation is expected to undergo closer scrutiny by the FDA.

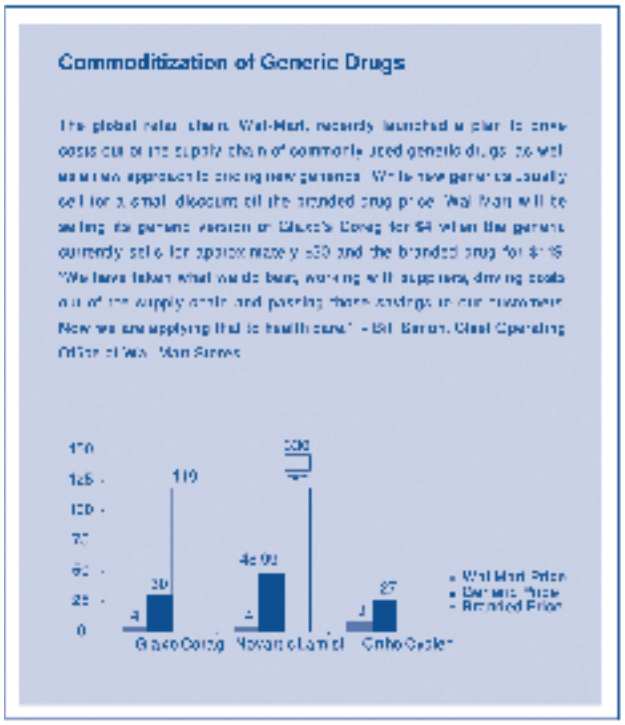
Figure 3.8 - Generics Share of the Total Market



Source: EFPIA, PhRMA

[22] Cowen and Company, Pharmaceuticals Analyst Report, March 2007.
[23] DATAMONITOR, "Generics will play an increasingly important role in the pharma industry," Market Outlook Series, September 2006.
[24] Cowen and Company, Pharmaceuticals Analyst Report, March 2007.
[25] Cowen and Company, Pharmaceuticals Analyst Report, March 2007.

With relentless cost competition, the high performing generic companies are building a diversified portfolio that includes a collection of drugs at different stages of the value spectrum. In addition, generics companies are starting to invest more in R&D for "super generics," or generic drugs that include an added value innovation that can be patented. Examples of such higher value goods include extended or sustained release dosing or reduced dose. At the top end of the spectrum, biosimilars or proprietary products can be a substantial source of revenue. Teva's Copaxone, for example, generated USD $1 billion in sales in 2005.



Source: Financial Times, Ltd. 2007

In addition to the large numbers of patents that will expire in traditional small molecule pharmaceuticals over the short term, an estimated USD $10 billion of revenue from biotech products is scheduled to lose patent protection in the next 5 years. With the opening of such a large market, efforts to genericize biotechnology products have intensified. Yet, biogenerics are proving to be a complex product category presenting numerous barriers to entry for traditional generics manufacturers including: higher development costs, greater time to market from development, more sophisticated manufacturing processes, stringent quality requirements, and a demanding and uncertain regulatory process. In addition, many of the skill sets that are necessary for biogenerics are not yet available in generics companies or in many of the countries where they operate, such skills include: biomedical engineering, biotechnological manufacturing, clinical trials, extensive regulatory compliance, pharmacovigilance testing and new marketing expertise.

In determining the efficacy of a generic, regulatory authorities require evidence of "equivalency" or similarity with the original drug. While chemical and cliniacl equivalency tests and processes exist for small chemical molecule products, few chemical and biological analyses currently exist that are able to determine whether a biologic replica of a drug is exactly equivalent to the original. This poses a significant hurdle for the manufacturing of biosimilars. Biotechnology companies, seeking to protect or extend their patents, argue that proving "bioequivalency" is impossible and those generic products should undergo full clinical trials. Despite the bioequivalency question, the EU has recently introduced a regulatory path for biogenerics (biosimilars). But a comparable path still does not exist in US, so the opportunity for growth in this area is still viewed as medium to long term.

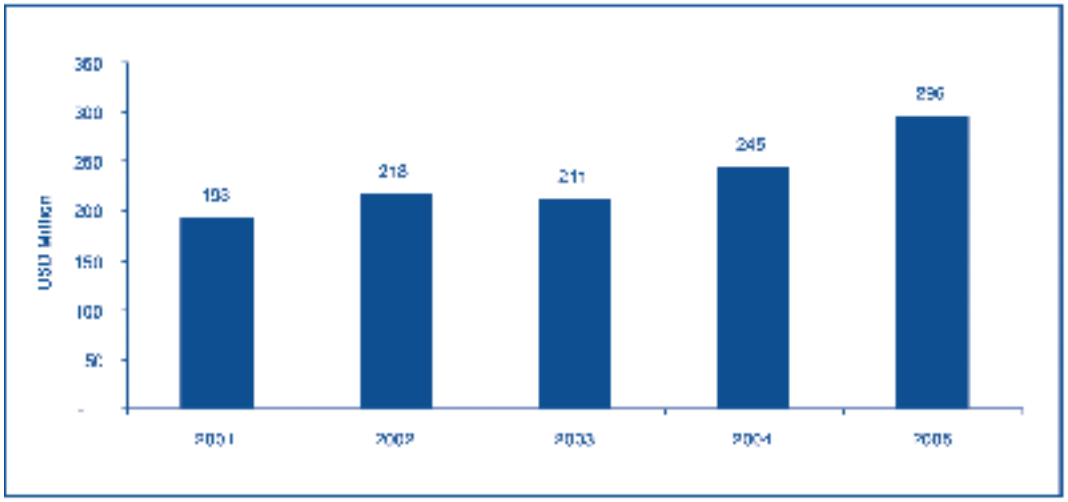
Both branded and generic segments of the pharmaceuticals industry are experiencing a wave of consolidation regionally and internationally. Market expansion from patent-owning companies, in an effort to maximize the return on R&D, is driving cross-border acquisitions and strategic partnerships. In the generics market, increased market share, diversification of the product portfolio, expansion of research, manufacturing and marketing capacity are all driving forces of consolidation. Both segments are facing increasing costs in demonstrating compliance with regulatory standards (R&D, clinical trials, cGMP, etc). And, as more and more suppliers are able to be sourced globally, scale in procurement is becoming a key contributor to cost competitiveness.

In the generics segment, acquisitions are being led by traditionally lower-value, under-developed markets (e.g., Jordan, India). While the Jordan and India industry clusters are very different in their structure and performance, the fact that companies from each country are showing up on the "buy-side" of international acquisitions demonstrates the success of companies in these countries in moving up the value chain and positioning themselves for a stronger role in the global industry. [26] Recent examples from Jordan include: Hikma's acquisition of a German company and its acquisition of a majority stake in Saudi Arabia Alijazeera Pharmaceuticals Industries to obtain 1.9% of the Saudi market and become the sixth largest in the market. With the same strategic planning of the Jordanian firms, United pharmaceuticals had been the first in the Middle East region to obtain EU-GMP certificate.

3. Recent Performance of Jordan's Industry

Total pharmaceuticals production in 2006 valued nearly USD $450 million, with over 75% destined for export markets. The remaining 25%, sold domestically, represents 30% of the local market. From 2001 to 2005, Jordan's exports grew at a seemingly strong 11% annually. However, global exports increased at 19% annually over the same period so Jordan's share of the world market actually decreased slightly. As illustrated by the graph below, export values have increased every year since 2001 with the exception of 2003, when the start of the Iraq war took Jordan's second largest market off the map. Sales to Iraq have since recovered, but not to the pre-war levels. Yet, the industry's quick recovery from the loss and growth into other markets is evidence of both its flexibility and resilience. High economic growth in the Middle East region has resulted in increased private and public spending on healthcare. This has boosted Jordan's exports to the region and is expected to continue for the foreseeable future. In the past two years, export values to Europe have been boosted by Euro pricing and the favorable exchange rate with the Dinar.

Figure 3.10 - Jordan Pharmaceuticals Exports

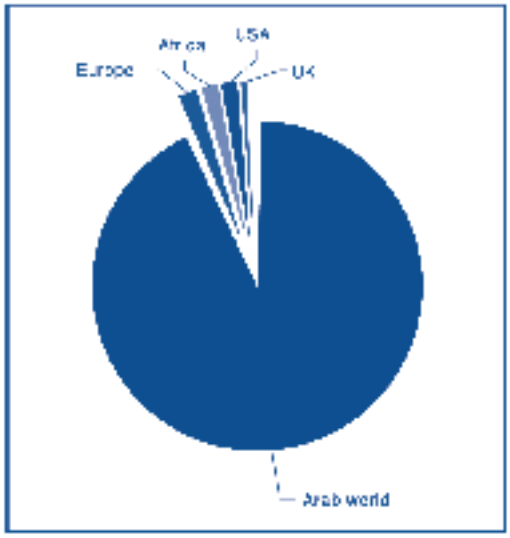


Source: WTO Trade Statistics, 2007

Despite continued expansion in Europe and North America (both through internal market expansion and by acquisition), over 80% of Jordan's exports are destined for the Middle East and North Africa region (see Figure 3.11). Within the region, the majority of Jordan exports are destined for Saudi Arabia and Algeria.

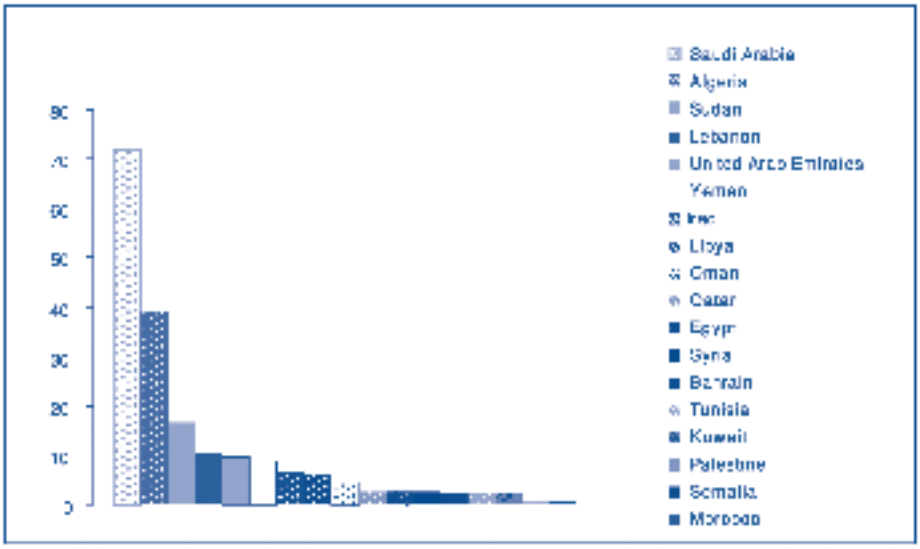
[26] Shukla, Shivani. "Mergers and Acquisition Trends in the Pharmaceutical Sector," December 5, 2006.

Figure 3.11 - Exports Distribution/ Value, J.D 2006



Source: Department of Statistics / MOPIC, GoJ 2006

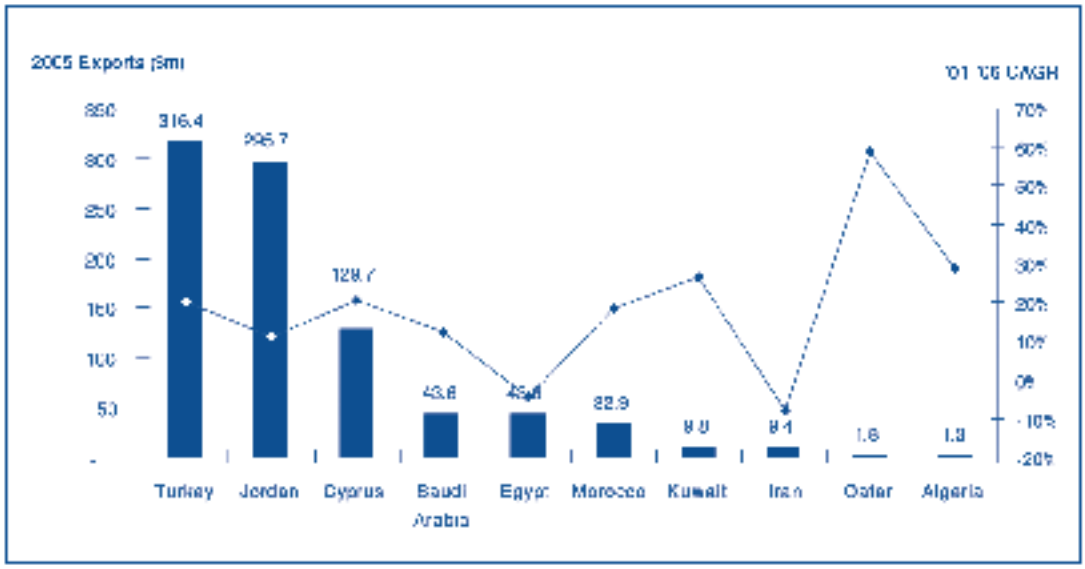
Figure 3.12 - Export to the Arab World 2006/ value



Source: Department of Statistics / MOPIC, GoJ 2006

Jordan was the second largest exporter in 2005 among exporting nations in the MENA region. However, as Figure 3.13 illustrates, exports for a number of countries are growing rapidly and could pose a threat to Jordan's core export markets in the region in the near future.

Figure 3 13 - MENA Pharmaceuticals Exports



Source: WTO Trade Statistics 2007

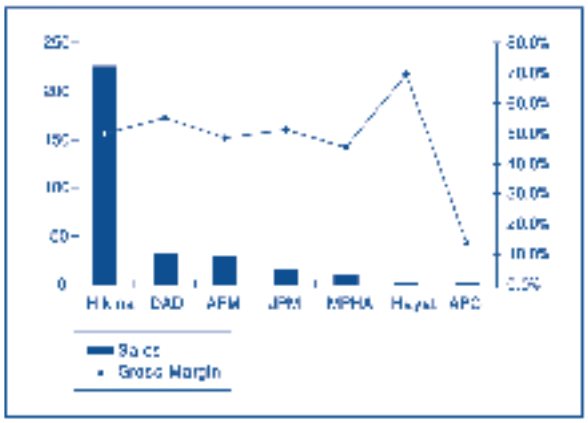
Jordan's export base covers a diversified range of medicines and dosage forms including solids, semi-solids, liquids, and aerosols. This diversification should continue to insulate Jordan from short and medium term shocks and shifts in their market, as it did in 2003. Yet, with 90% of total revenues still generated by branded generics, Jordanian manufacturers are facing a rising threat from lower cost producers in other markets.

Jordan's pharmaceutical market mirrors the international market. It is highly fragmented with no one player controlling even 10% of the market. The largest player, Hikma, has a 7.6% share of the domestic market. Financial performance among publicly traded Jordanian firms was strong. Sales growth has varied significantly among firms, with Hikma registering 23.2% annual growth since 2002, while APM grew at 3.4% over the same period. The generic pharmaceuticals segment at Hikma actually declined 1.3% in 2006 driven by price pressure in the US market.

"After three profit warnings in 6 months, the Jordanian generic pharmaceuticals manufacturer now looks in a position to accelerate growth: in each of the next two years we expect sales growth of 34% and 21%, respectively, and net profit growth of 21% and 31%. This is driven by strong organic growth and consolidation of acquisitions at MENA generics and injectible generics, Hikma's two most important divisions. On the other hand, while conditions are more challenging in the US division due to increasing competition on its older product portfolio; the company is expected to price new launches more aggressively, making 2006 the trough for margins. Overall we believe Hikma's unique position in the MENA region warrants a premium valuation now that the downgrade cycle appears to be finished. Even when we apply the emerging European generics forward PE multiple of 18x, we see 22% upside in the stock. Hikma is now a favored name in CEEMEA pharma, alongside Israel's Teva and recently upgraded Zentiva."

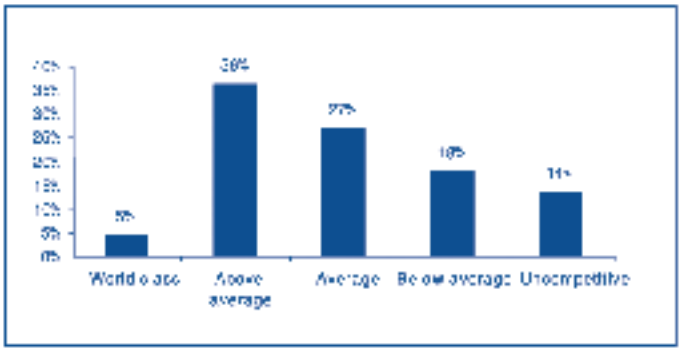
- Robert Bonte-Friedheim, CitiGroup Analyst

Figure 3.14 - Financial Performance of Jordanian Pharmaceutical Firms (2006)



Source: Global Investment House, June 2007

Figure 3.15 - When compared with competing industries in the world, the pharmaceuticals industry in Jordan is:



Source: JHCO, Pharmaceutical Global Industrial Survey, 2007

Jordanian companies registered a combined net profit of JD 55m in 2006 up 15% annual over the past 2 years,[27] with Hikma the sales leader by a significant margin. With its recent acquisition of Arab Pharmaceutical Manufacturing Co. Ltd (APM), Hikma will further consolidate its dominance in Jordan. Gross margins for all but one manufacturer were above 40%, with most hovering between 50% and 60%. While both gross and net profit margins are well below the average of the largest global pharmaceutical manufacturers, they are either slightly above or in-line with the major generics manufacturers. In a number of cases, Jordanian pharmaceutical companies are generating net profit margins that are well above international competitors in generic manufacturing and rival those of the most innovative and globally competitive firms. However, through this year, Jordanian firms have benefited from tax breaks from profit on any drugs that are destined for export markets.

[27] Global Investment House, "Jordan Pharmaceutical Sector Report," June 2007.

Regionally, new regulations are shifting the market and presenting both challenges and opportunities for Jordanian firms. A key challenge is in Algeria, where the introduction of reference pricing regime in Algeria has affected sales of Jordan's two largest producers, Hikma and Dar Al-Dawa. The new pricing regime designed to lower the price of prescription drugs calls for the Algerian government to fix reference prices for product categories based on regional and international survey data. Drug companies are still able to price over the reference price, but the patient must cover the additional cost over the reference price.[28] However, a major opportunity appears to have opened in Egypt. In September 2006, Egypt agreed to eliminate price and regulatory restrictions on Jordanian pharmaceuticals in Egypt. Egypt is one of the largest pharmaceutical markets in the Middle East. However protective barriers to entry have essentially shut Jordanian producers out of the Egyptian market to date.

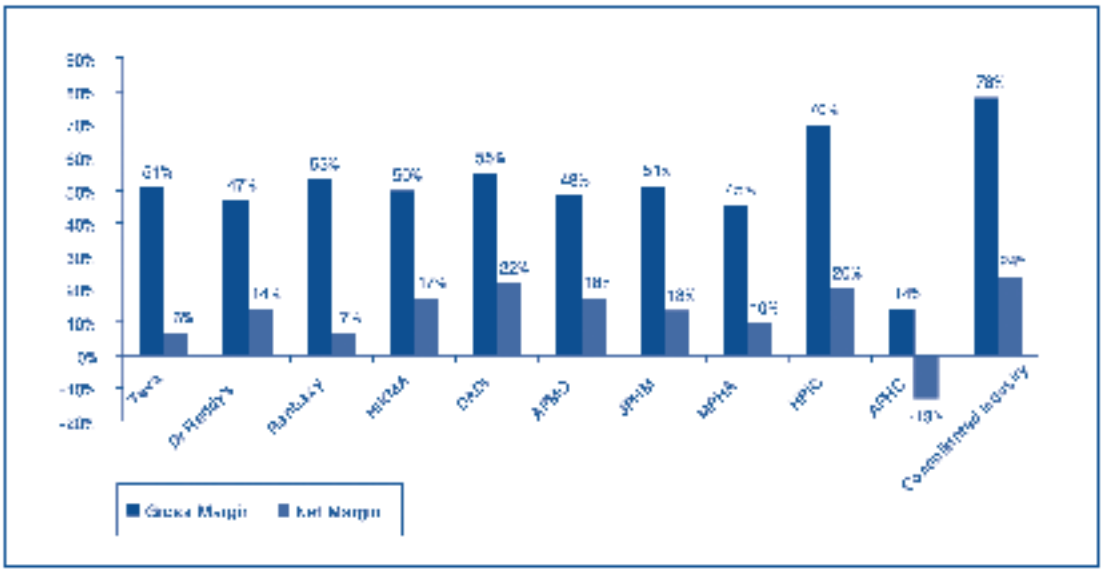
[28] Global Investment House, "Jordan Pharmaceutical Sector Report," June 2007.

4. Regional and International Benchmarking

This section compares the pharmaceuticals industry in Jordan with regional and international benchmarks. Overall, the pharmaceutical leaders have a positive view of the industry's regional competitiveness, with 50% responding that Jordan is leading the region, and an additional 41% indicating that Jordan was above average. However, the majority of respondents acknowledged that Jordan is still not yet world-class (95%). In addition, there are diverging views on Jordan's position in the international market. 41% suggested that Jordan is above average and 32% indicated that it is below average. This suggests that there may be limited understanding of the state of global competition in the sector as well as Jordan's position worldwide.

Based on the latest financial data, Jordanian companies are proving that they can perform on par with international competitors. In 2005, operating margin for the top 15 generics companies was an average of 16.1% compared to 24.8% for the group of top 9 branded drug companies and a 25% margin for Teva. In 2005, Hikma Pharmaceuticals registered 26.4% operating margin. Despite strong manufacturing presence, Jordan imports 10% more of its pharmaceuticals than does Israel: Israel 60%, Jordan 70%, Saudi Arabia 80%, and Lebanon 94%. The strong position of Jordanian companies in the Middle East has allowed many of them to capitalize on the high growth in the regional market.

Figure 3.16 – Financial Performance of Industry Benchmarks - 2006



Source: Global investment House 2007

In the summary table below, Jordan is benchmarked with pharmaceuticals industries in the region and internationally. UAE, discussed in detail below, is not included due to limited publicly available quantitative data on the industry. Not all countries track and disseminate the same sets of indicators. The blanks in the table are due to these inconsistencies. In most cases, the numbers do not come from the same source - there may also be inconsistencies in definition and data collection. As a result, the benchmark data should be considered directional for comparison purposes only, not precise calculations. In all instances, the number shown is the last available year. Each number is individually sourced from country specific sources. A more extensive benchmarking table and individual sources can be found on the Jordan Competitiveness Observatory website.

Table 3.1 – Pharmaceutical Industry International Benchmarking

	Canada	India	Switzerland	Turkey	Israel	Jordan
Net output: Pharmaceutical Value Added (mn)	2,320	1,673				
Employment in the Pharmaceutical Sector	32,600		31,000	23,176	6,900	4,476
Value added per person employed	66,744					
Pharmaceutical Exports (mn)	4,574	2,442	[illegible]	310	3,720	295
Average Wage in the pharma industry	35,765	3,812				
R&D expenditures in the Pharmaceutical Sector ($m)	1,060	485	3,073		0	
Domestic market size for Pharmaceutical Products, USD		6,505		6,500		245
Imports of Pharmaceutical Products (mn)	9,533	1,081	14,755	2,850	568	282
Pharmaceutical Exports to the US	3,556	873	8,407		3,493	5
IPR Protection (Score out of 7)	6	5	6	3	5	4
Number of Clinical Research Organizations EU or US Accredited		24			11	
Cumulative number of firms in the pharma industry			65		37	16

Turkey

Turkey is one of the largest pharmaceutical producers in the Middle East and ranks 16th among the world's leading pharmaceutical producing countries. In 2006, Turkey's exports totaled USD $310 million, having grown from USD $157 million in 2002. Despite substantial growth, Turkey's share of global exports have fallen over the same period from 0.44% to 0.37%.[29]

Turkey's modern pharmaceuticals industry dates back to 1954 with the Foreign Capital Incentive Law which abolished the production of drugs in pharmacies and allowed pharmaceutical companies to enter the market and establish drug production factories. Complemented by other legislation, this law is seen to have modernized the industry and triggered the restructuring and consolidation of pharmaceutical manufacturing.

According to the Pharmaceutical Manufacturers Association in Turkey there are 42 manufacturing facilities nowadays in the pharmaceutical industry, 14 of which are multinational.[30] Turkey's relatively large and increasingly prosperous population gives Turkish manufacturers a substantial domestic market estimated at nearly USD $7 billion, larger than India in both per capita and absolute value. Turkish manufacturers serve over 60% of the domestic market.[3]

While Turkey is open to foreign investment in pharmaceuticals, the industry still operates under certain government protections and strict price controls. Over 80% of drugs sold in Turkey are directly paid for by the Government, and the Ministry of Health reserves the right to control drug price increases. In addition, high value added taxes are imposed on drugs in Turkey - these taxes are seen to limit profit margins, in spite of its high pricings.

Prior to 1995, the Government subsidized the importation of active ingredients in drugs. Between 1995 and 2000, these subsidies were abolished resulting in a short-term decrease in production levels of some drugs and the complete halt of others.

Turkey has made notable progress in fortifying its intellectual property rights over the past 5 years. Its IPR rating in the Global Competitiveness Report, which measures perceptions of the quality of intellectual property protection, has increased from 2.7 out of 7 in 2002 to 3.3 in 2006. Despite this progress, Turkey remained on the United States priority watchlist for potential intellectual property rights violations in 2006 with 47 other countries. As stated in the 2006 Special 301 Report «The United States encourages Turkey to further strengthen data protection against unfair commercial use of undisclosed test and other data submitted by pharmaceutical companies seeking marketing approval for their products, particularly with respect to the start date of the period

[29] ISPE Turkey Affiliate Engineering Pharmaceuticals Association
[30] Pharmaceutical Manufacturers Association, Turkey2007
[31] Pharmaceutical Manufacturers Association of Turkey

of protection and the inappropriate linkage of the term of data protection to the length of the patent term. The United States encourages Turkey to implement a system of coordination between its health and patent authorities to prevent the issuance of marketing approvals for unauthorized patent-infringing copies of pharmaceutical products.»

UAE[32]

In absolute values, UAE is still a relatively small player in the regional and global pharmaceuticals industry. Pharmaceutical exports from UAE totaled just USD $80 million in 2005 with mid-term forecasts estimating exports to grow moderately to USD $133 million by 2011. Exports are principally focused in the region: Saudi Arabia, Pakistan, Yemen, Somalia and other GCC countries. In spite of the small manufacturing industry, UAE's pharmaceutical market is large by regional standards, worth USD $1.1 billion in 2006, with per capita expenditure on drugs standing at USD $222.40. Reflecting higher per capita income levels, a majority of consumption (90%) is from higher value prescription drugs.

Over 80% of drugs sold in the UAE are produced outside the UAE. Nearly 72 countries export their medicines to the UAE, with 10 countries accounting for 80% of the total pharmaceuticals sold in the country. High levels of per capita income have attracted major pharmaceuticals companies from the US, UK and Switzerland - many choosing to establish regional offices in UAE. Because of its dependence on imported drugs, UAE has limited the registration fee for a foreign product to approximately USD $135. However, while the financial barriers to entry are low, regulatory barriers are high. All new drug entrants into UAE must meet high international standards and have US FDA or EU manufacturing licenses.

Current local manufacturing is of the lower value, basic products in the market and contributed just 0.7% of the economy's GDP in 2006. The UAE's production leader, Gulf Pharmaceutical Industries (Julphar), is mostly export focused and only generates 7% of its sales from UAE's domestic market. However, near-term investments into the industry coupled with expansion of health services in UAE are expected to transform pharmaceuticals manufacturing in UAE. Healthcare firms are actively looking to expand in the Middle East, where health care spending is forecasted to triple. With its reputation as one of the easiest business environments in the region, major multinationals have been increasing their activities in the UAE.

Similar to other sectors in UAE, the Government is trying to strike a balance between maintaining tight controls over standards and regulation with keeping the industry open for competition. The main authority in charge of the pharmaceutical industry in the UAE is the Ministry of Health. In an effort to increase market efficiency, the government recently announced that all pharmacies must acquire an online presence to make transactions smoother between the patients, physicians and doctors when submitting a prescription in to the system. In addition, the online system also aims to monitor the doctors' productivity. The government is also working to decrease prices inline with other GCC countries. In September 2005, the average selling price of high end products was reduced by 7% and a subsequent cut lowered it by another 11%.

[32] The Business Monitor Intelligence Report "United Arab Emirates Pharmaceuticals and HealthCare Report" Q2 2007- published in June 2007.

The Pharmaceutical and Medicine Control Department is the main pharmaceutical regulatory division in the Ministry of Health. Currently, Dubai Health Authority administers 17 primary health centers and is preparing to apply a new law allowing 100% of foreign ownership in the healthcare sector, in order to continue attracting investment in the country.

In addition, UAE is investing in a number of initiatives that will further attract foreign financial and intellectual capital and enhance the pharmaceuticals industry. The UAE aims to continue building multiple health care facilities, expecting the demand for healthcare to continue to grow reaching USD $60 billion by year 2025, according to a report by Abraaj Capital. Dubai Healthcare City, schedule to open by 2010 will be the first healthcare free zone and is already attracting ample foreign interest for investment. The UAE's ongoing commitment to the bio-technology sector includes construction of the USD $400 million Dubai Biotechnology Initiative -a biotech park- to achieve standards in Europe, US, Canada, Japan and Singapore. This initiative also aims to promote active research and development in both biotech and pharmaceutical sector.

One of the major obstacles to the growth of medical research and pharmaceuticals manufacturing in UAE is the patent laws - still considered to be below international standards. This constraint is acknowledged by various authorities and the government is actively working to resolve the issue.

Survey results from the Dubai Chamber of Commerce show that the pharmaceutical industry faces a series of obstacles: Market regulation of the drug sector, the need for private long term funding for drugs, lack of specialized labor, illegal discounts in pharmacies.

Israel

In 2006, Israel's exports of pharmaceuticals reached USD $3.77 billion, up from USD $784 million in 2001. This represents a remarkable 37% annual growth rate and has vaulted Israel from 3% global market share in 2001 to over 8% in 2006. In 2006, over 92% of Israel's pharmaceuticals exports were sold in the US market, up from 76% in 2002. Imports of pharmaceuticals products were less than one-third of exports totaling USD $963 million in 2006.

The pharmaceuticals sector in Israel is relatively concentrated in a few large scale operations. 5 pharmaceutical companies dominate the industry and represent 80% of the pharmaceutical market share in Israel: Teva, Agis, Dexxon, Taro and Rakah. Of the 5, Teva is the clear leader. With over 100 years in operation, the company generates up to USD $2.2 billion in global sales and is considered one of the largest manufacturers of generic drugs worldwide. Illustrating a high level of productivity and achievement of production scale, Israel's workforce in pharmaceuticals was barely 7,000 employees in 2006.

In 2006, pharmaceutical companies in Israel invested 12% of sales back into R&D. This has grown from 9% in 2001, and illustrated Israel's efforts to leap into the development and manufacturing of high-value, patented products. With a strong research and development institutional infrastructure, these investments are already bearing fruit. Israel placed second, after Japan, in the number of applications filed by local companies and bodies for patent registration in Europe, according to a Business Data Israel (BDI) study (2005).[33] In 2006, Israel came in 4th place in the number of patents that were approved and registered in the United States with 178.5 patents per 1 million residents, marking an 18% rise from 2005, where it came in fifth place. Within Israel about 78% (5,319) of the patent registration applications filed were by foreign companies. However, Israel remains on

[33] "Focus on Patents, Israel Second in Place" - "Federation of Israeli Chamber of Commerce"

The priority watch list for the lack of the IP protecting legislation that permits many violations of this concern and places Israel among top priorities of US watch list

The spending towards drugs amounted top USD $675 million (13% of national health expenditure) in 2001. Furthermore, 60% of the USD $675 million came from importing drugs most of which were patented. A majority of expenditure on pharmaceutical drugs (60%) in Israel comes from health funds. The remaining 32% are divided into private pharmacies (mainly over-the-counter drugs) with 20%, purchases by the Palestinian authorities totaling 9%, and hospitals with 3%.[34]

Canada

Canada's annual net output in pharmaceuticals, at USD $2.8 billion is double that of India, but less than 25% of Switzerland's net output. With 32,500 employees, Canada's value-added per person employed is nearly USD $90,000 per year. Despite substantial production capacity, Canada is a net importer of pharmaceuticals and other medicines. In 2006, Canada exported USD $4.7 billion of pharmaceuticals, but imported USD $9.7 billion. Exports have steadily increased over the past decade and have more than tripled since 1997. Of the total pharmaceuticals industry, manufacturing of generic drugs represent 18% of sales and 32% of employment. The main market for Canadian generic manufacturers is the United States, representing over 40% of total exports for generic manufacturers.[35]

Among generics manufacturers, spending on research and development is estimated to be 15% of sales. While modest in comparison to the United States and Switzerland, Canada has a robust R&D capacity ranking 7th in the number of biopharmaceutical patents per million people (see figure 3.17 below).

Similar to other Western countries, Canada is facing a crisis in the cost of pharmaceutical drugs and its weight on the overall healthcare system. After hospital care, pharmaceuticals is the largest cost category of the country's health expenditure. Total public and private expenditure on prescription drugs has risen by 12% annually since 2000, compromising the financial sustainability of the public drug program.

Recognizing the growing importance of pharmaceuticals in health care, Canada's Health Ministers across provinces were directed by First Minister in Sept.2004 to establish a Ministerial Task Force to develop and implement the National Pharmaceuticals Strategy. All Health Ministers (with the exception of Quebec which started its own pharmacare program) were included in the task force under the co-chairmanship of the federal and British Columbia Ministers of Health. The strategy addresses the challenges and opportunities across the drug life cycle using an integrated, collaborative, multi-pronged approach to pharmaceuticals within the health care system. There are nine components to the strategy:

1. Develop, assess and cost options for catastrophic pharmaceutical coverage;
2. Establish a common National Drug Formulary for participating jurisdictions based on safety and cost effectiveness;
3. Accelerate access to breakthrough drugs for unmet health needs through improvements to the drug ap proval process;
4. Strengthen evaluation of real-world drug safety and effectiveness;
5. Pursue purchasing strategies to obtain best prices for Canadians for drugs and vaccines;

[34] "The Pharmaceuticals Industry in Israel" - Dr. Amihood Bay
[35] Canadian Generic Pharmaceutical Association, http://www.canadiangenerics.ca

6. Enhance action to influence the prescribing behaviour of health care professionals so that drugs are used only when needed and the right drug is used for the right problem;
7. Broaden the practice of e-prescribing through accelerated development and deployment of the Electronic Health Record;

8. Accelerate access to non-patented drugs and achieve international parity on prices of nonpatented drugs; and,
9. Enhance analysis of cost drivers and cost effectiveness, including best practices in drug plan policies.

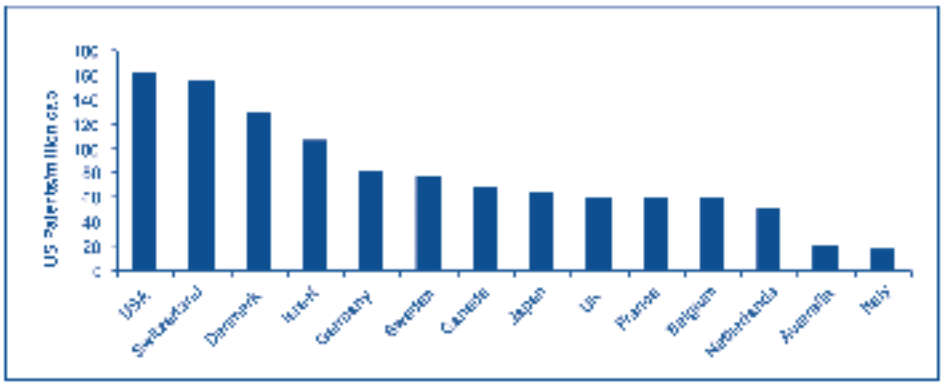
Switzerland

On nearly every indicator, Switzerland is considered world-class in pharmaceuticals manufacturing. Net output is estimated to be USD $12.16 billion with exports totaling over USD $30 billion, one-third of which are destined for non-EU countries.[36] Switzerland's pharmaceutical industry employs over 31,000 people, approximately that of Canada, and is considered to be one of the most productive industries worldwide. Sixty-five pharmaceutical companies are registered with the Swiss pharmaceutical association.

The domestic market in Switzerland is relatively small at under USD $3.4 billion, but Swiss manufacturers can access the full EU market which totals USD $156 billion.[37] Total spending on healthcare as a percentage of GDP is estimated to be 11.5%, second in the world only to the United States. Generics make up just 5.9% of the market value in Switzerland, the second lowest percentage share in Europe.

Switzerland is well-known in the pharmaceuticals industry for its strong research and development capabilities. The number of patents per million people rival that of the United States. According to the Swiss pharmaceutical industry association, the industry spent an estimated USD $3.2 billion in research and development in 2004. Research and development expenditure overall in Switzerland is estimated to total 2.57% of GDP .[38]

Figure 3.17 - Number of BioPharma Patents per Million Capita



Source: USPTO

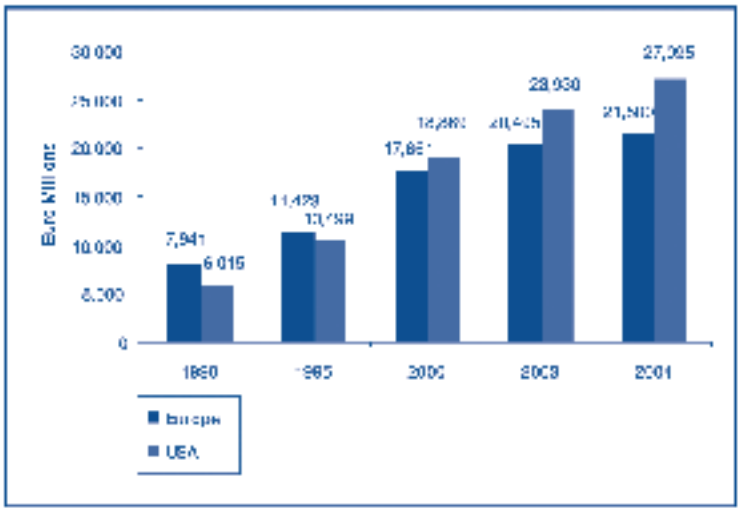
[36] European Federation of Pharmaceutical Industries and Associations, "The Pharmaceuticals Industry in Figures," 2006.
[37] European Federation of Pharmaceutical Industries and Associations, "The Pharmaceuticals Industry in Figures," 2006.
[38] European Federation of Pharmaceutical Industries and Associations, "The Pharmaceuticals Industry in Figures," 2006. 2001 Data.

Table 3.2 – International and Regional Pricing Policies

Pricing Policies		Other
International		
Canada	No regulation "Pharmaceutical Pricing and Reimbursement Policies in Canada" by Valarie Paris and Elizabeth Docteur, OECD. February 2007.	
India	Price controls in place, but no specific generic pricing regulations	
Switzerland	At market entry, 30% below originator price "Pharmaceutical Pricing and Reimbursement Policies in Switzerland" by Valarie Paris and Elizabeth Docteur, OECD June 2007.	Generic prices are currently high compared with other European countries.
Regional		
Israel	Recent patent laws allow for the R&D into generics while originators still under patent. But no evidence today of generic pricing regulations.	
Turkey	20% below originator "Study on Pharmaceutical Financing and Reimbursement in Turkey – Component II" by Panos Kanavos, Ismail Ustaland, and Joan Costa-Font September 2005.	
UAE	Minimal price controls	

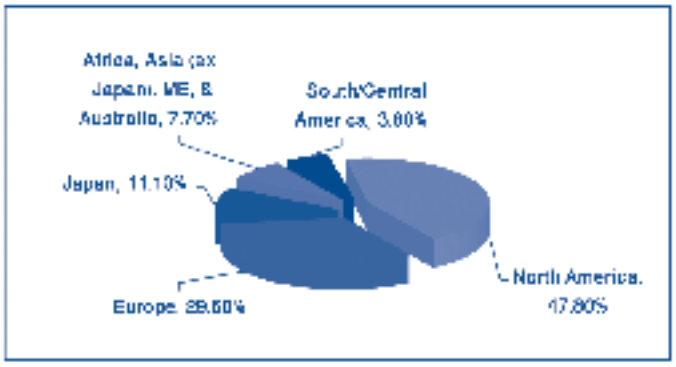
The following graphs provide additional information on the performance and trends in the pharmaceutical sector worldwide. The United States continue to be the leader in R&D investments and share of global sales, widening its lead over Europe in recent years.

Figure 3.18 - Pharmaceuticals R&D Investments in Europe and the USA (Euro Millions)



Source: EFPIA & PhRMA

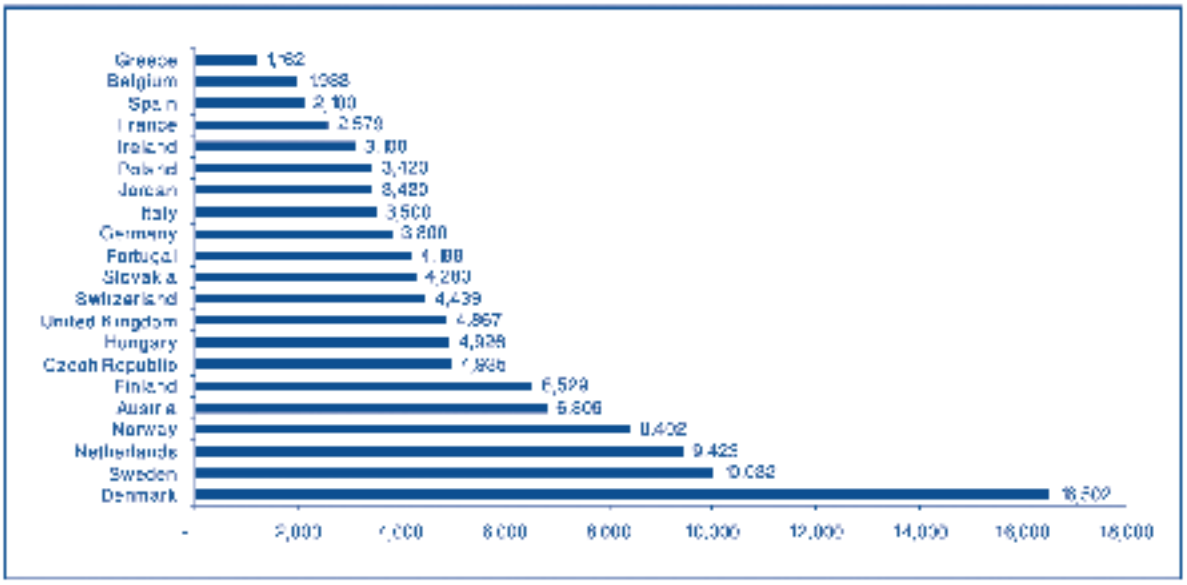
Figure 3.19 - Distribution of Global Pharmaceutical Sales by Region (2004)



Source: Norway Pharmaceutical Association

As an indicator for market penetration, pharmacies per 1000 inhabitants in Jordan compares well with European countries.

Figure 3.20 - Number of Inhabitants per Pharmacy

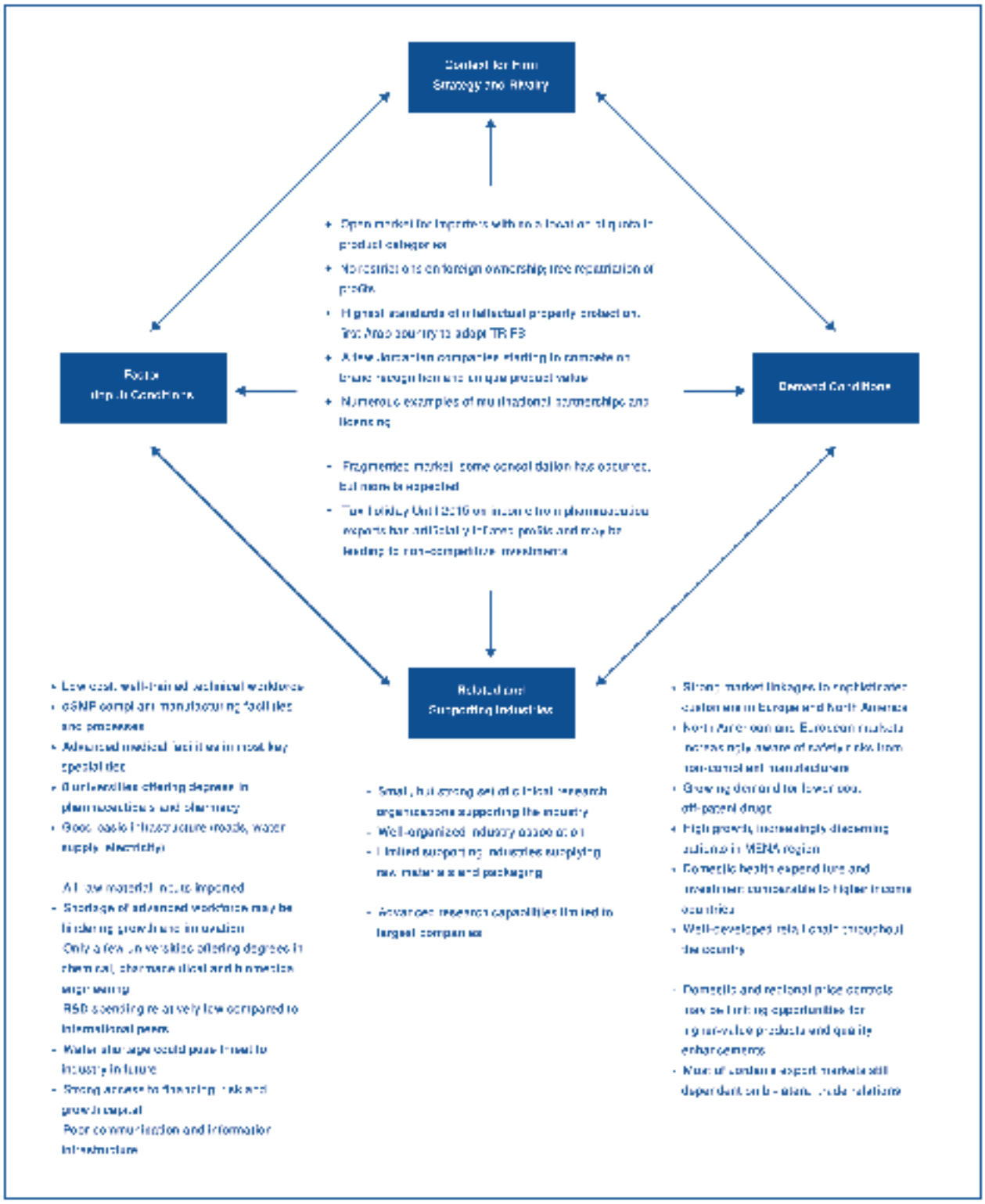


Source: Norway Pharmaceutical Association

5. State of Competitiveness

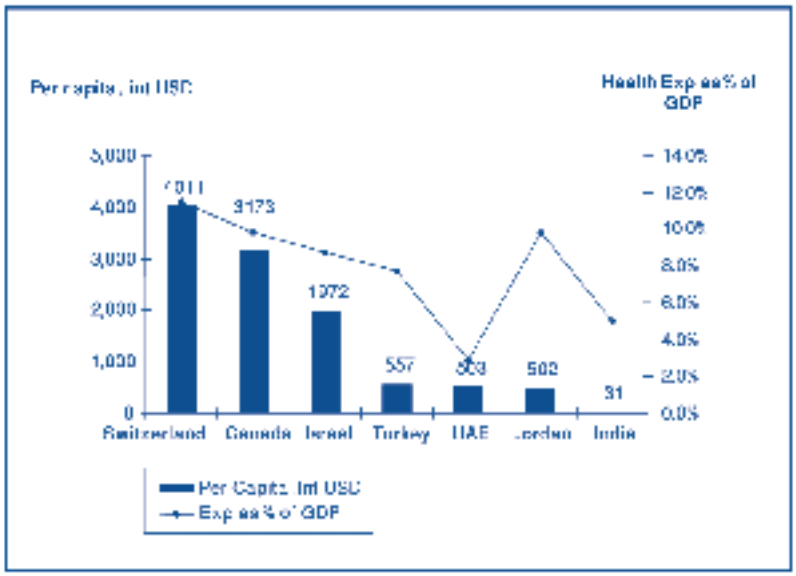
This section examines the state of some of the factors that determine the competitiveness of the pharmaceutical sector and highlights the issues that are currently or may soon become obstacles to further growth.

Figure 3.21 Porter Diamond for the Pharmaceuticals Sector



5.1 Demand Conditions

Figure 3.22 - Total Expenditure on Health (2004)



Source: WHO 2004

Jordan is well-recognized for its relatively strong health services, driven by the Government of Jordan's commitment to supporting the health of its population. in 2005 total Health expenditure as a percentage of GDP 9.8% and 13.8% of that was the drug expenditure[39]. Ranking Jordan just below Switzerland, above Canada and Israel and well above other regional countries. On a per capita basis, Jordan is in line with spending in Turkey and the UAE, with private expenditure on health care as a percentage of total spending on health estimated at 51.6% in 2004.[40] Of private spending, out of pocket expenditure represented 74% in 2004.

In 2002, per capita consumption of pharmaceuticals was USD $49, with an aggregated local demand for pharmaceuticals estimated at USD $245 million. Increasing life expectancy (69 in 1995 to 71.5 in 2005) and literacy rates are expected to further increase demand for pharmaceuticals products in Jordan, with a particular market focus on the increases in diabetes and cardiovascular diseases in the region.

The Ministry of Health is the main provider of healthcare in Jordan providing subsidized care to all citizens. Despite a growing private care system, the Ministry administers the majority of Jordan's hospitals, general and specialty health centers. The Civil Insurance Program is the largest public insurance program in Jordan.

Patients in Jordan are considered to be relatively sophisticated in their consumption preferences and patterns. Nearly 75% of Pharmaceutical CEOs surveyed consider the average Jordanian customer a sophisticated consumer. There are over 300 registered wholesalers importing drugs from across the world, reflecting the openness of the Jordanian market and the demand for regional and international drugs. Hospitals and pharmacies are the main channels to market for pharmaceuticals in Jordan. However, similar to markets in Europe and the United States, the purchase decision is by three parties: the doctor, the pharmacist, and the patient. Customers often are prescribed the brand name drug by the doctor, but then it is up to the discretion of the pharmacist whether it is appropriate to distribute the generic if the branded is not available. Jordan has a well-developed retail chain with over 1600 pharmacies operating throughout Jordan.

[39] Jordan Ministry of Health, Ministry of Financial, General Budget Department, "analysis health expenditure 2001-2005".
[40] World Health Organization, "World Health Report," 2004 data, later years currently not available

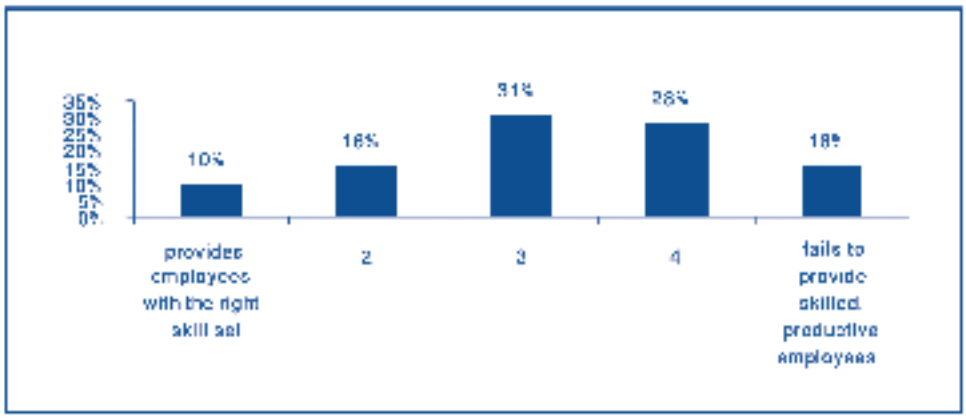
Despite the level of sophistication in the domestic market, the size of the Jordanian market requires that most pharmaceutical companies look outside Jordan to track and understand market trends and develop new products. Nearly 60% of industry leaders surveyed believe that Jordanian consumers do not anticipate international trends in the market and over 75% rely on regional or international markets for new ideas and practices.

5.2 Factor Conditions

Nearly all raw material inputs are imported for pharmaceutical manufacturing, impacting both cost competitiveness and quality control. For now, input costs are considered by the industry to be only slightly above average globally; however, the industry surveys indicate that input costs are rising fast despite tax breaks on imports. The majority of basic pharmaceutical inputs are sourced from Asia (China and India), with the higher value excipients coming in from Europe. Jordan is viewed by the Pharmaceutical companies as supplying a strong infrastructure - nearly one fourth of companies considered Jordan's infrastructure to be "world class" and nearly 60% considering infrastructure to be above the world average.

Despite numerous institutions offering pharmaceuticals related degrees, the quality and quantity of the professional workforce is a significant constraint to the growth of the pharmaceuticals industry. There is a significant shortage across the key technical and management functions: operating and production managers, industrial and chemical engineers, and pharmacists. The survey results highlight that, with a few exceptions, the majority of universities are not meeting the employment needs of the industry. CEOs highlighted (by majority) only two higher education institutions out of eight. the ninth had not any graduated yet batch Compounding the workforce development, brain drain appears to be further constraining the industry - 85% of surveys highlighted migration of skilled labor outside Jordan as a significant issue that is compromising their ability to retain the best workers.

Figure 3.23 - Industry Specific Skills Development in Universities



Source: JNCO, Pharmaceuticals Stakeholders online survey, 2007

Investment in market-driven research and development will play a key role in determining if Jordanian companies are able to move up the global value chain into branded and patented biopharmaceuticals. Jordan currently ranks 60th out of 61 countries in the IMD competitiveness report in total expenditure on research and development, and R&D spending by companies is low compared to international standards.

According to industry leaders, start-up and expansion financing in the form of venture capital and angel financing for pharmaceuticals activities is readily available in Jordan. However, over half of the companies surveyed

indicated that there are limitations in securing larger scale public financing from regional or international equity markets. As strong, middle market companies seek to expand outside Jordan and the immediate region, constraints on large scale financing may limit expansion of market share and requisite production capacity.

5.3 Context for Strategy and Rivalry

The pharmaceuticals market in Jordan is among the most open and competitive in the region. Jordan has an open market for all importers with no allocation of a quota in the number of registered products of the same therapeutic molecule. For investment, there are no restrictions on foreign ownership and full repatriation of profits. As a result, the market share of multinationals in Jordan stands at over 50%.

Accession to the WTO and recent bi-lateral trade agreements with the United States and Europe have left Jordan with one of the highest standards of intellectual property laws, and pushed Jordan to be one of the first Arab countries to adopt the TRIPS (Trade Related Aspects of Intellectual Property Rights) agreement. All products marketed in Jordan must be manufactured in facilities compliant to WHO GMP practices.

While the high standards and market openness create a strong foundation for healthy competition, prices are still controlled by the government. Prices for local manufacturers are set at a maximum 20% below imported products. Once a price is set, it is rarely changed. The government did briefly experiment with loosening prices: extensive six-month market study when it released prices for some over-the-counter drugs in 2006, but an initial and unanticipated increase in prices caused the government to quickly revert to price controls after a trial period of about two months. Fixed prices in Jordan result in competition based on brand recognition for generic drugs and an active sales force that visit doctors and pharmacists on a regular basis.

Despite recent consolidation in the industry, the industry is still seen to be a relatively fragmented market. After a copy-cat strategy during the industry expansion in the 1990s, the Jordanian companies that survived consolidation are now pursuing strategies that hinge on diversification of product lines and regions. Within Jordan, competition is viewed to be driven by the quality and price of the product with 85% of sector stakeholders'/ Leaders' survey responses indicating that this was much more important than personal networks and relationships in the country.

The core of most company strategies is in being first to market with a generic after patent expiration. Jordan's sophisticated manufacturing base has positioned it well to respond quickly to market opportunities from patent expirations. The Bolar exemption is a policy to allow generic manufacturers to prepare research and development and regulatory procedures (Without production or stockpiling) before patents expire, so that generic products can be ready for sale as soon as the patent expires, which was an added value to the Jordanian firms who benefited from the Bolar exemption. In the EU, a community wide Bolar exemption was introduced end of 2005 by the pharmaceutical review. Before, the development and testing work required to make an application could only take place after the patent expiry, resulting in delays of around two years.[4] The Bolar exemption now adds value to European firms as it does to some of the benefiting Jordanian firms.

With an understanding of regional and global market trends, a number of Jordanian firms are actively pursuing expansion strategies for both production and marketing into other regions through a range of strategic partnerships and acquisitions. As international standards become increasingly stringent, Jordan will stay up-to-date, positioning itself well as the global industry continues to integrate and consolidate.

[41] Based on http://www.euractiv.com/en/health/generic-medicines/article-117497

On internal management, the industry views itself as technologically advanced with 91% of the companies indicating that they were operating information systems that were either world-class (23%) or advanced (68%).

One near-term, significant threat looms on the horizon that will impact the financial performance of the industry: Current income tax laws exempt net profits derived from pharmaceuticals exports; however, WTO accession requires Jordan to tax corporate profits from all sectors. The new tax rate is anticipated to be set at a flat rate of 15% of taxable profits starting years 2015.

5.4 Related and Supporting Industries

Jordan has a strong, well-recognized healthcare and medical services sector that can serve as a key supporting industry to the pharmaceutical sector. Advanced medical facilities are operating in cardiology, laparo-endoscopic surgery, kidney transplantation, ophthalmology, neurosurgery, plastic surgery, and onconolgy. In addition, clinical research organizations are conducting clinical research on molecule and drug formulations to ensure similar and comparable rates of release, bioavailability and bioequivalence and testing for efficacy, effectiveness and safety. There are currently six clinical research organizations (CROs) operating in Jordan with a number exploring activities outside the traditional scope of a CRO including the development of advanced drug delivery solutions, the provision of outsourcing services to pharmaceutical companies, and assistance with second and third stage clinical trials.

The supporting industry associations are playing an active role in representing the industry to the government and other parties. JAPM appears to be effectively representing the industry to the government and in international markets and the Pharmacists Association is backed by a strong membership.

As indicated above, research is happening but on a small scale and limited to a few companies and individual scientists.[42] There are numerous qualified and respected pharmaceutical researchers in Jordanian universities that are actively developing and patenting intellectual property. Only 38% of companies indicated that the current R&D institutions directly support the competitiveness of the industry. However, 52% indicated that firms and universities are actively collaborating and this collaboration is directly supporting the specialized needs of the industry. The few CROs that are operating in Jordan received broad and varied responses on the survey indicating that the quality is sporadic with some CROs delivering high quality service and some CROs still very weak.

[42] Prof. Dr. Luay Rashan; Dean of pharmacy faculty in the Applied sciences private university, is a well-known pharmaceutical researcher who had a world patent grant in 2005 for one of his researches and 5 others were pending until the record of 3 patented innovation in this field was recorded by July 2007.

5.5 Regulations and Role of the Government

Overall, the private sector of the industry expressed a positive and healthy relationship with the GoJ. Firms use a variety of formal and informal channels to communicate with the government; however, only 6% indicated that they use formal public-private forums.

Recognizing the cost disadvantage to the industry, the Prime Minister in 1999 exempted manufacturers of all customs fees on imported raw, packaging and other inputs. In addition, the industry benefits from a tax holiday on 4% universities tax. Despite the numerous tax incentives, R&D is not consistently incentivised through tax breaks. Only 17% of companies indicated that R&D tax incentives exist. Overall, current tax rates appear to be in line with international levels in the industry, hovering between 25 and 30% tax on profit.[43]

The Jordan Free Trade Agreement with the US set new, higher standards of conditionality in labor, environment, IPRs. This has had both positive (higher standards, better positioned and prepared to operate with US manufacturers) and negative effects (higher costs relative to other developing countries) in the industry.

In 2000 Jordan was taken off the Watch List for pharmaceutical manufacturers due to the proper implementation of the property rights protection standards. However, in 2007, PhRMA requested that Jordan be placed back on the Watch List due to recent weaknesses in intellectual property protection and barriers to market access for US firms in Jordan, however Jordan was not placed on the watch list of 2007.

6 .Constraints to Growth

Among the major constraints highlighted by the survey of industry leaders, the most worrisome issues include: corruption (50% indicated it was an issue with 23% responding that it was extremely problematic); inadequately educated workforce (68% highlighted it as an issue -- 18% responded that it was extremely problematic); work ethic of the labor force (73% / 14%); inefficient government bureaucracy (67% / 24%) supply of infrastructure (64% / 14%); inflation (71% / 14%).

The pharmaceuticals sector in Jordan has enjoyed a remarkable growth projectory over the past 20 years but the shifting market dynamics, convergence of small and large molecule medicines and the further commodization of the generics market present both opportunities and threats for the industry. In addition to the direct results from the industry survey, the constraints to adaptation and growth include:

- The supply of a specialized workforce with practical expertise in the industry,
- Research and development that can bridge the industry's growth into higher value medicines
- The strength and breadth of supporting services, especially the clinical research organizations
- The ability of middle-market firms to tap growth financing to consolidate and grow market share in the region and internationally

[43] Based on compiled public financial statements of publicly traded pharmaceuticals companies worldwide

Information Technology

INFORMATION TECHNOLOGY

1. HISTORY & CONTEXT

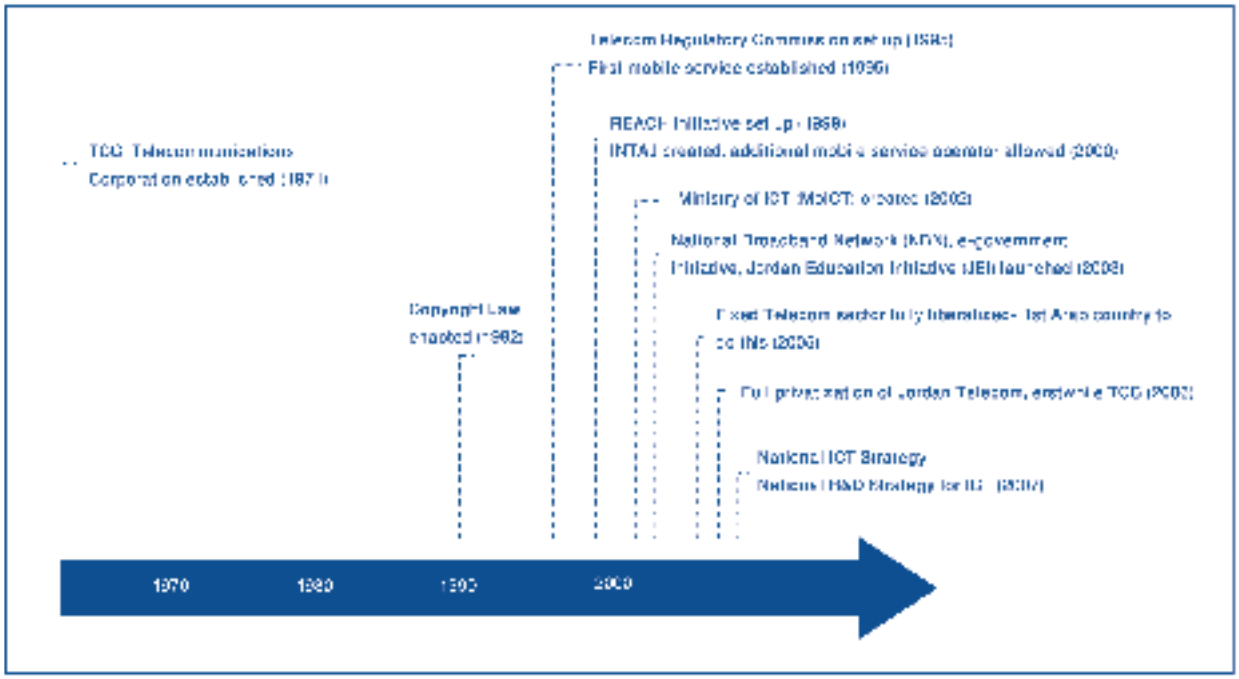
The Jordanian IT sector has been witnessing fast changes after being identified as a key catalyst for economic growth by His Majesty, King Abdullah II in 1999. Total revenues from the sector have surged from a little over USD $170 million in 2001 to over USD $750 million in 2006 - a more than four-fold increase. Export revenue also quadrupled - rising from USD $40 million to USD $191 million in the same period. At present, the IT sector contributes about 5% of GDP.[44] Moreover, the number of employees in the IT sector has increased from a little over 6,000 to over 10,000 in this same period.

While there were a number of key milestones in the establishment of the IT sector in Jordan before 1999, the impetus came when IT was identified as a key driver for transforming the country into a knowledge-based economy and a potential regional hub in this industry. The following timeline shows some of the key milestones that have been made in the evolution of the sector.

KEY FIGURES:

- **Total revenues of $770 million in 2006**
- **Export revenues of $191 million in 2006**
- **Sector contributes 5% of GDP**
- **Sector employs over** 10,000

Figure 4.1 - Timeline for the Jordan ICT Industry



[44] From the SABEQ PEAP presentation on IT

A lot of work has been done in the last few years to create a policy and regulatory environment that is conducive to the competitiveness of the sector - a separate Ministry for the industry was created to oversee policy work. An independent regulatory arm, the Telecom Regulatory Commission (TRC), was created and given more capacity through the years. The industry's first and primary business association, INT@J, was established in 2000 and has been at the forefront in working with the government to outline strategies for the industry's growth; the main accomplishment has been the series of REACH initiatives. Jordan is the first country in the region to have a fully liberalized fixed telecom sector and it also has one of the most competitive mobile telecom sectors.[45] Several public-private sector initiatives in IT education and connectivity have been undertaken, and most recently the focus on this industry has been strengthened with a comprehensive National ICT Strategy and a separate R&D Strategy for ICT, recognizing the importance of public-private partnerships to the industry's competitiveness.

The result of these initiatives is slowly emerging as Jordan is being recognized as a potential regional hub for IT. AT Kearney's Global Services Location Index (GSLI) ranks Jordan as second in the region after Egypt as the most favored location for offshoring services. Jordan's Education Initiative (JEI) has been so successful that it has been replicated in India, Egypt, and Bahrain. In the region, Jordan scores well in several indicators important for eventual competitiveness of the sector: IT spending as a percentage of GDP, education spending as a percentage of GDP, quality of education, physical infrastructure, and others. The government's efforts are viewed favorably by the domestic industry and have been sending positive signals to the rest of the world, promoting Jordan as a destination of IT investment.

However, much remains to be done: IT usage in the country is still low, constraining domestic demand. The industry is characterized by fragmented firms that compete more on price than on quality. Collaboration and cooperation is scarce. The regulatory environment, though enabling, is considered unfocussed. Most importantly, Jordan's key strength, its education system, is not being utilized to its potential for producing educated and skilled IT professionals. Compared to the 10,000 IT employees in Jordan, Egypt has over 45,000.[46] There is a lack of linkages between the government, academia, and industry on R&D, a deficiency that, sooner or later, will hold back the sector.

2. Regional and International Market Trends

The importance of the IT industry, on its own and as a driver of economic growth as a whole, is increasingly recognized. According to a report by the Economic Intelligence Unit, in countries where software, hardware, or IT services are generated in abundance the contribution to gross domestic product can be upwards of 5%.[47] This awareness has led to concerted efforts at national levels to foster IT sectors and has resulted in fast growing and ever changing trends in this field around the world. Between 2000 and 2005, IT spending worldwide increased by 5.6% per annum. In comparison, it grew by 19% per annum among the 5 fastest emerging economies and IT markets: Brazil, Russia, India, China, and South Africa.[48] Household expenditure on IT services has increased in OECD countries from 1.8% of final consumption in 1991 to 2.3% in 2004.[49]

Driving this approach is the increasing connectivity among and between businesses and people through the Internet. As of September 2006, 1.1 billion people (16.7% of global population) had access to the Internet reflect-

[45] Invest in ICT in Jordan 2005,' MoICT. Jordan
[46] From CIT EGYPT- web portal of the Ministry of Communications & Information Technology, Egypt
[47] The means to compete: Benchmarking IT industry competitiveness,' Economic Intelligence Unit, 2007
[48] OECD Communications Outlook 2007, OECD
[49] ibid

ing an average annual growth rate of 201% between 2000 and 2006.[50]

Businesses are increasingly spending more on IT too as R&D becomes a tool to remain competitive. The expanding use of IT has changed way businesses function worldwide by redefining corporate business models to more optimal value and supply chains, and a reinvention of an individual's work.

The public sector too is making greater use of IT. For example, more than 500 e-government initiatives have been launched around the world within the last 5 years, an exponential increase compared to only 3 that were launched in 1996.[5]

There is increasingly greater cross-sectoral integration of IT; the number of stakeholders being brought together on one platform using IT is increasing. Among the numerous examples worldwide, Saudi Arabia has launched a one-stop comprehensive service portal for the 2.5 million incoming pilgrims from across the world.

With life cycles in technology becoming shorter, the only way for businesses in the IT industry to remain competitive is to find ways to innovate and create higher value added products. Existing heavyweights in the IT sector like India and China that have been competing on low costs are finding their advantage increasingly eroded. For instance, in the latest survey conducted by AT Kearney on the most favored global services (Global Services Location Index- GSLI),[52] while India and China retain their top 2 positions, the margin by which they lead has declined as other countries are catching up. The implications for competition are that countries must deliver value-added products and services to remain competitive.

Voice communication continues to dominate over data services as a driver of communications growth. Within voice technology, mobile services have far outstripped fixed line telephony. For instance, in the OECD countries, mobile services now account for 40% of all telecom revenue and mobile subscribers outnumber fixed line subscribers by a ratio of 3:1. However, increasing reach of broadband is giving rise to technologies such as VoIP that are exerting downward pressure on prices for traditional voice services.[53]

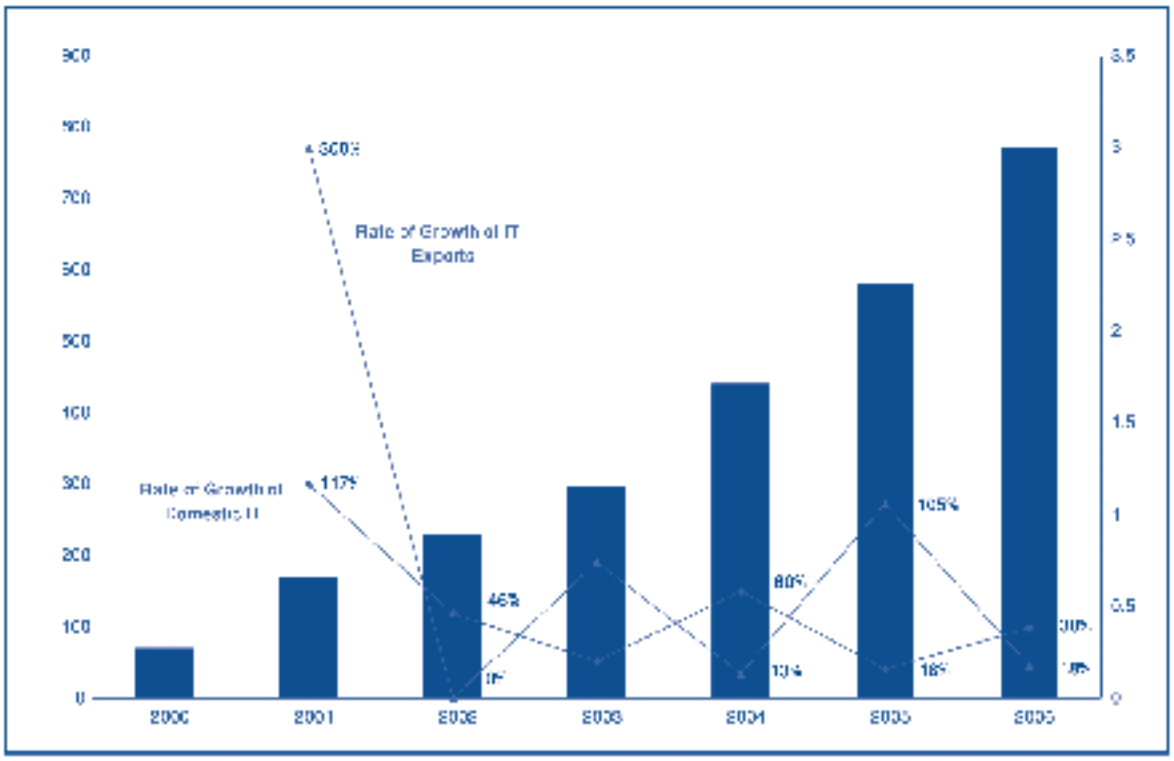
Within software, applications software accounts for about 55% as compared to systems software. The market is led and dominated by a few firms such as Microsoft, Oracle, IBM and Konami. Firms in the US and Europe together hold much of the market- a share of 83%. Globally, information systems security is one of the priorities of IT investment and one of the fastest growing segments in the sector; security software suites such as Symantec and McAfee are the leading and fastest growing segments. According to the US & Foreign Commercial Services and US State Dept., critical issues include intrusion privacy, anti virus, and spam filtering.

3. Recent Performance of Jordan's IT Industry

Jordan is being recognized as a potential destination for delivering IT products & services for the region and the world. The IT industry has been growing at an increasingly fast pace over the last few years and currently accounts for about 5% of GDP.[54] Total revenues of the sector rose from USD $581 million to over USD $770 million between 2005 and 2006 alone, reflecting a growth rate of 32.57%. Exports rose from USD $163 million to USD $192 million in the same period and continue to account for about 25% of the total revenue. [55]

[50] The Global Information Technology Report 2006-2007, World Economic Forum
[51] ibid
[52] The Global Services Location Index (GSLI) 2006, AT Kearney
[53] OECD Communications Outlook 2007, OECD
[54] E Readiness Report Jordan 2006, MoICT
[55] Annual ICT Statistics 2006, INTAJ, Jordan

Figure 4.2 – Total IT Revenue (USD mn) & Growth Rates of Domestic & Export IT



Source: Annual IT Statistics 2006, INTAJ, Jordan

Looking more closely at the IT sector, the following Figure 4.3 shows the share of different subsectors in terms of domestic revenues and exports. While hardware accounts for a major share of domestic sales, it is (software In-house development packaged S/W Sales, Telecommunications and software development).

Figure 4.3 - Domestic Revenues

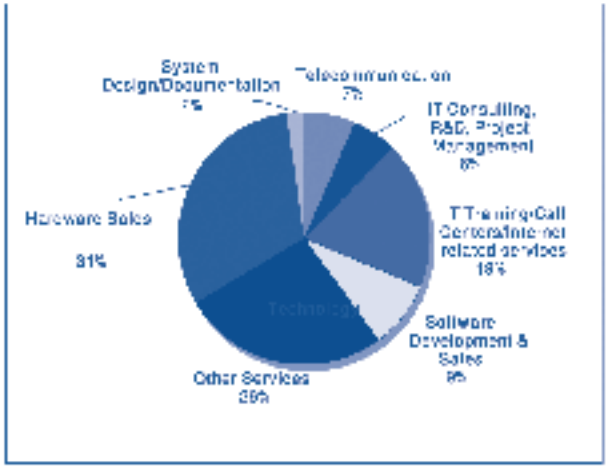
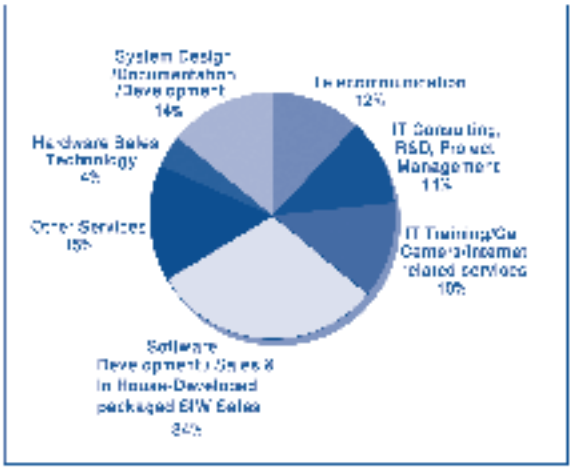


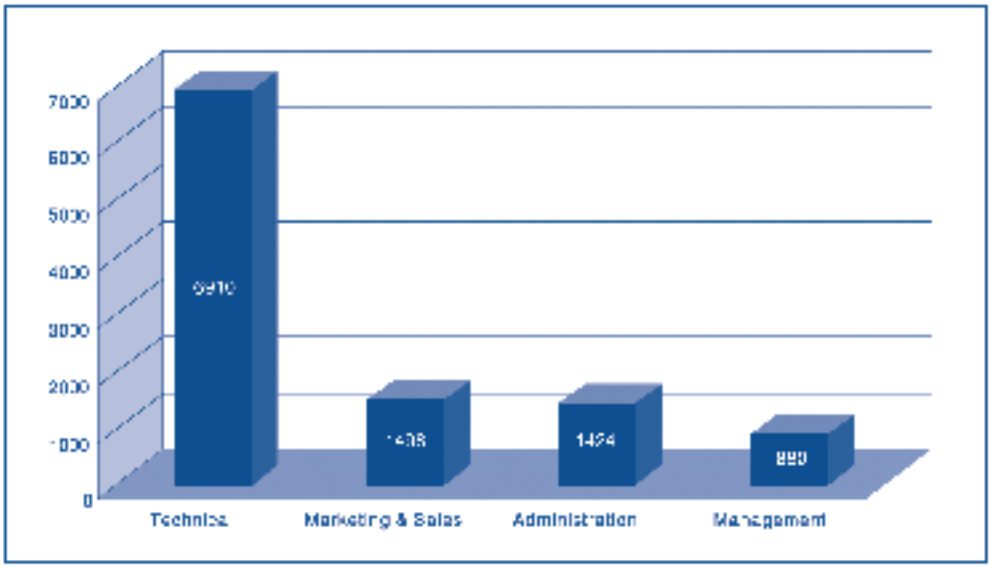
Figure 4.4 - Export Revenues



Source: Annual IT Statistics 2006, INTAJ, Jordan

Labor Force employed in the IT sector stands at over 10,000 employees, up from only 1,250 in 2000. Most of this labor force however is employed in technical functions.[56]

Figure 4.5 - Employment IT By Function



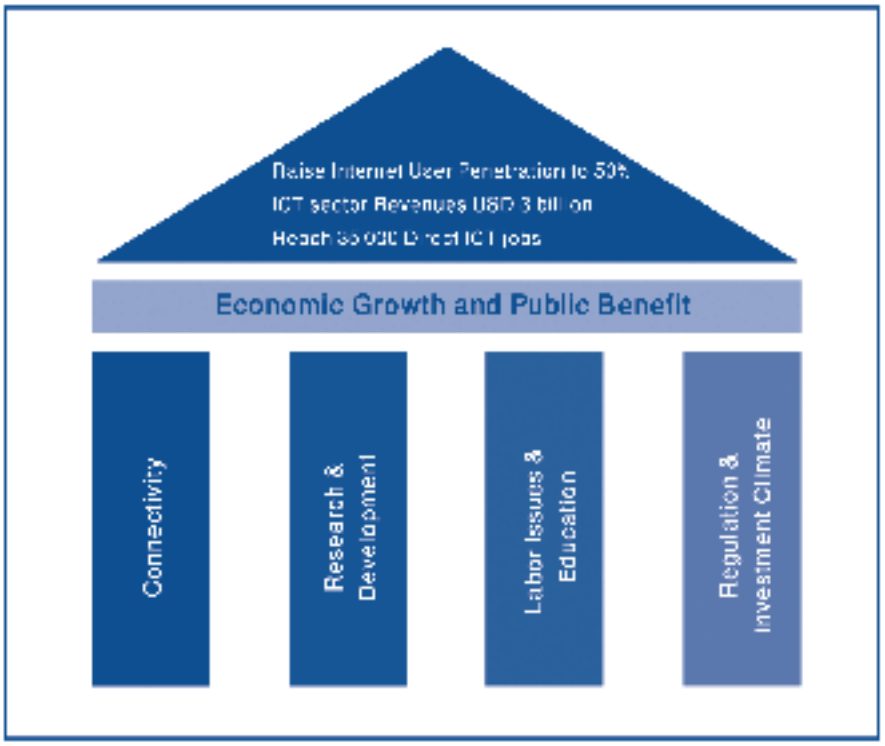
Source: Annual Statistics 2006 INTAJ

In the domestic sector, IT revenues come from 3 major segments: the government, the business sector (largely telecommunications and banking and finance), and private households.[57]

In IT exports, the region accounts for 87% of the share, with Saudi Arabia alone having a 32% share. Given Jordan's small domestic market size and the tremendous export potential to other parts of the world, the country's IT strategy will have to emphasize growing its exports from 25% share to a larger share in IT revenues.[58]
As mentioned earlier, this sector received major impetus after 1999 with greater focus on the part of the current government. The most recent development has been the unveiling of the National ICT Strategy in July 2007 that outlines 3 strategic goals for the industry and the 4 pillars through which these goals will be achieved. This strategy has been developed in coordination with the industry and all stakeholders are aligned with the objectives. Figure 4.6 draws out the key elements of this strategy, which aims at increasing usage, revenue and employment in ICT by improving channels of connectivity, R&D, human capital, and the regulatory environment.

[56] K4D PPT, World Bank
[57] Based on calculations from data in the Annual ICT Statistics for Jordan, INTAJ
[58] Annual ICT Statistics 2006, INTAJ

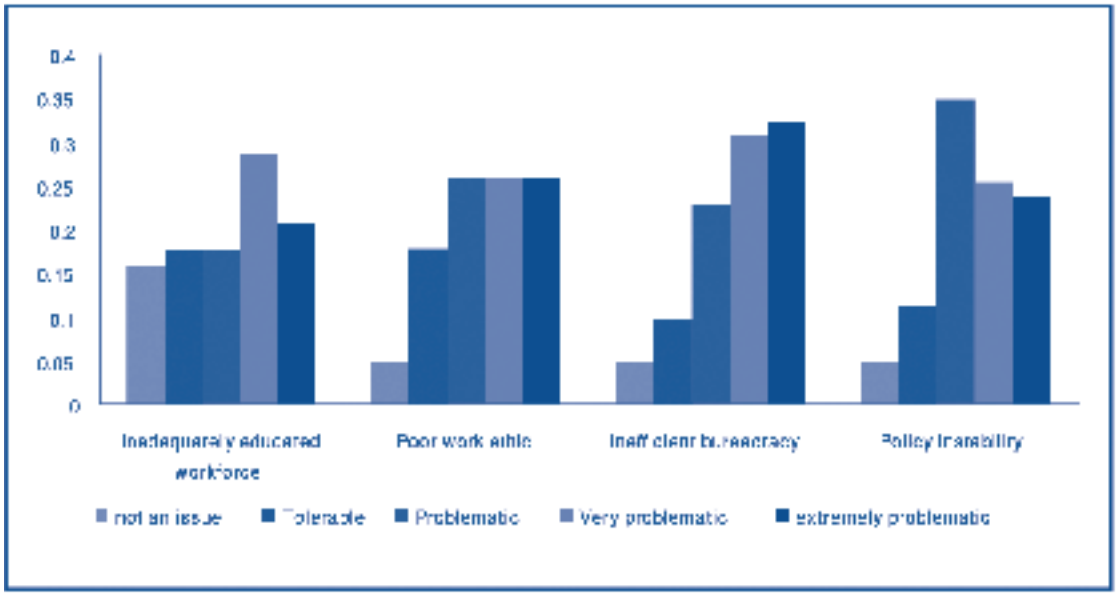
Figure 4.6 - National ICT Strategy of Jordan 2007-2011



Source: From the presentation 'National IT Strategy of Jordan 2007-2011' INTAJ

In terms of the main constraints in the industry, on the basis of the results of the survey conducted among representative firms in the IT sector, the main challenges come from 2 broad areas: (1) human resources with inadequate education and poor work ethics, and (2) government with its policy instability and inefficiency. Perceptions on selected challenges are shown in Figure 4.7 below which also illustrates that a larger percentage of firms consider these particular challenges problematic than not an issue.

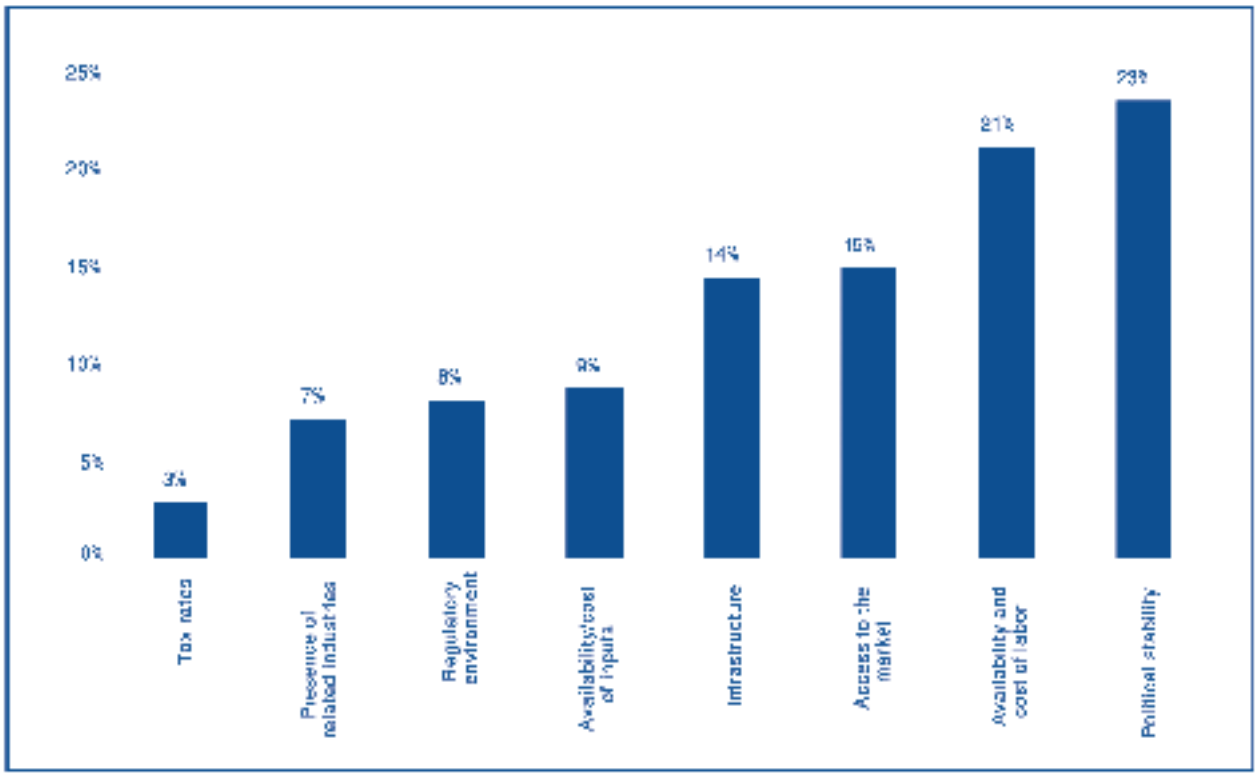
Figure 4.7 - Major Challenges Facing ICT Sector



Source: JNCC, ICI Stakeholders' online Survey, 2007

When it comes to the main advantages of doing business in Jordan, political stability and cheap labor are perceived to be the primary benefits.

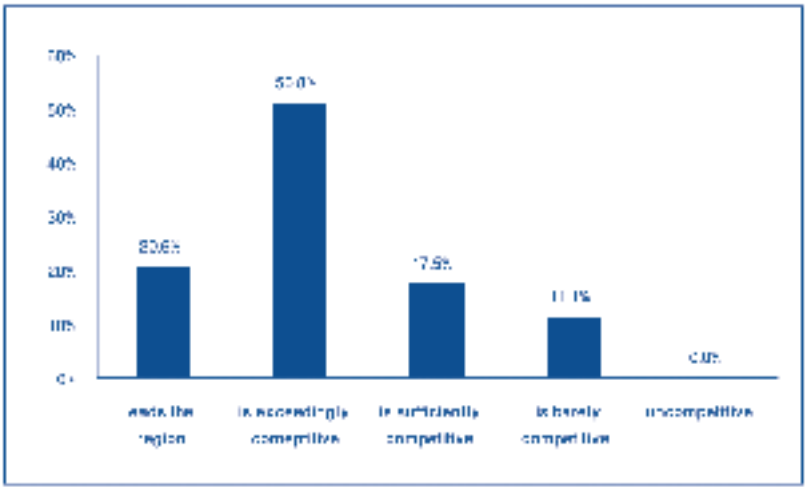
Figure 4.8 – Advantages of being based in Jordan



Source: JNCO ICI Stakeholders online Survey, 2007

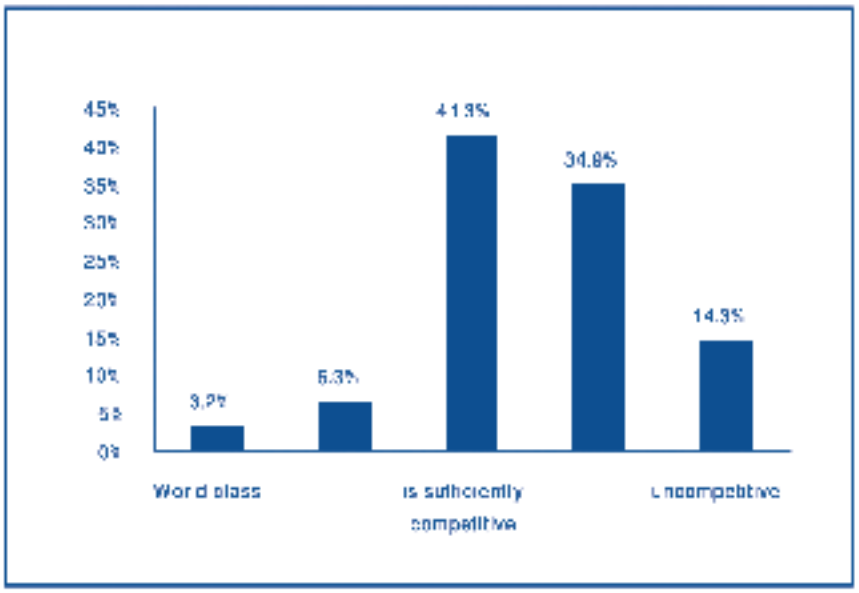
On average, Jordanian IT firms consider themselves highly competitive and leaders in comparison to peers in the region, but believe they lag behind when compared to global standards. They consider the greatest competition coming from the US, UK, Israel and India.

Figure 4.9 - Compared to IT competition in MENA, Jordan IT



Source: JNCO, ICI Stakeholders online Survey, 2007

Figure 4.10 - Compared to ITcompetition in the world, Jordan IT



Source: JNCO, ICI Stakeholders' online Survey, 2007

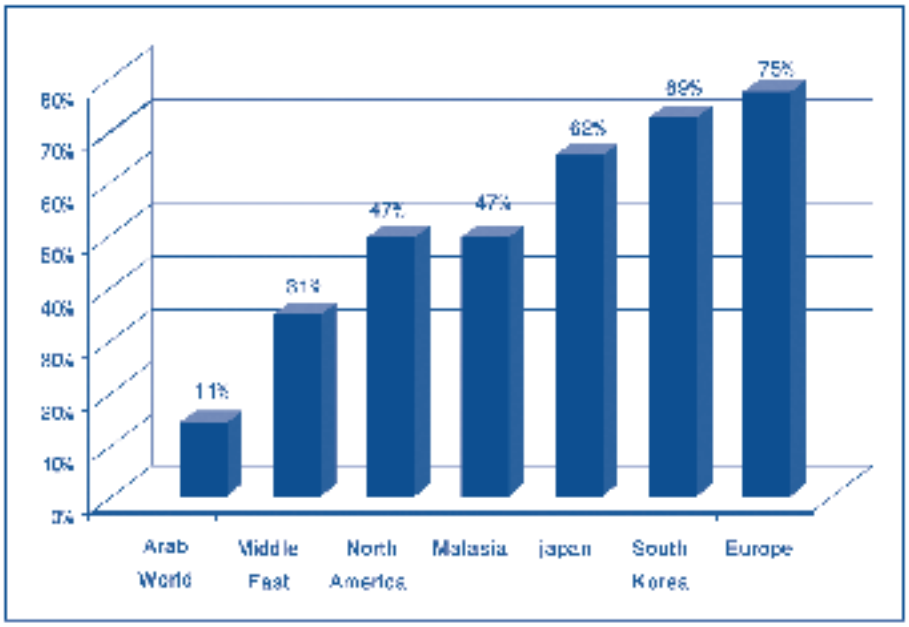
4. REGIONAL AND INTERNATIONAL BENCHMARKING

In summary, the Jordanian IT sector is expanding rapidly under the influence of positive and favorable interventions being undertaken by both the industry and the government. However, Jordan is yet to tap its existing potential and many challenges remain to ensure that the sector continues to grow becomes even more competitive.

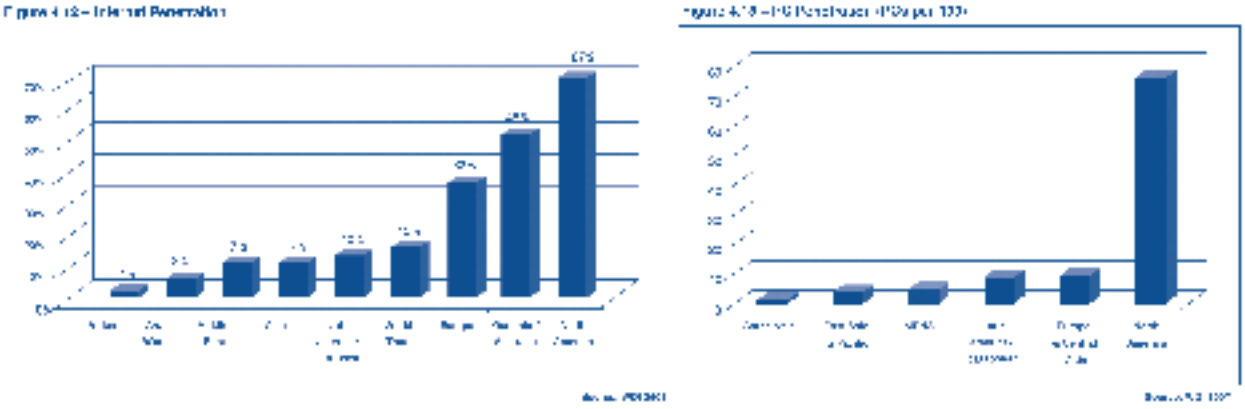
Regional Trends

The MENA region, in line with global trends, has been investing in and promoting the IT industry, recognizing it as a potential engine of economic growth. There has been a rapid increase in usage over time with mobile and internet penetration having grown at a CAGR of 58% and PC penetration having grown at 17% since 2000. Compared to the rest of the world however, indicators on internet, mobile, and PC usage show that the region still has a long way to go before it can attain comporable levels of penetration. This is clearly indicated from Figures 4.12 and 4.13 below:

Figure 4.11 – Mobile Penetration

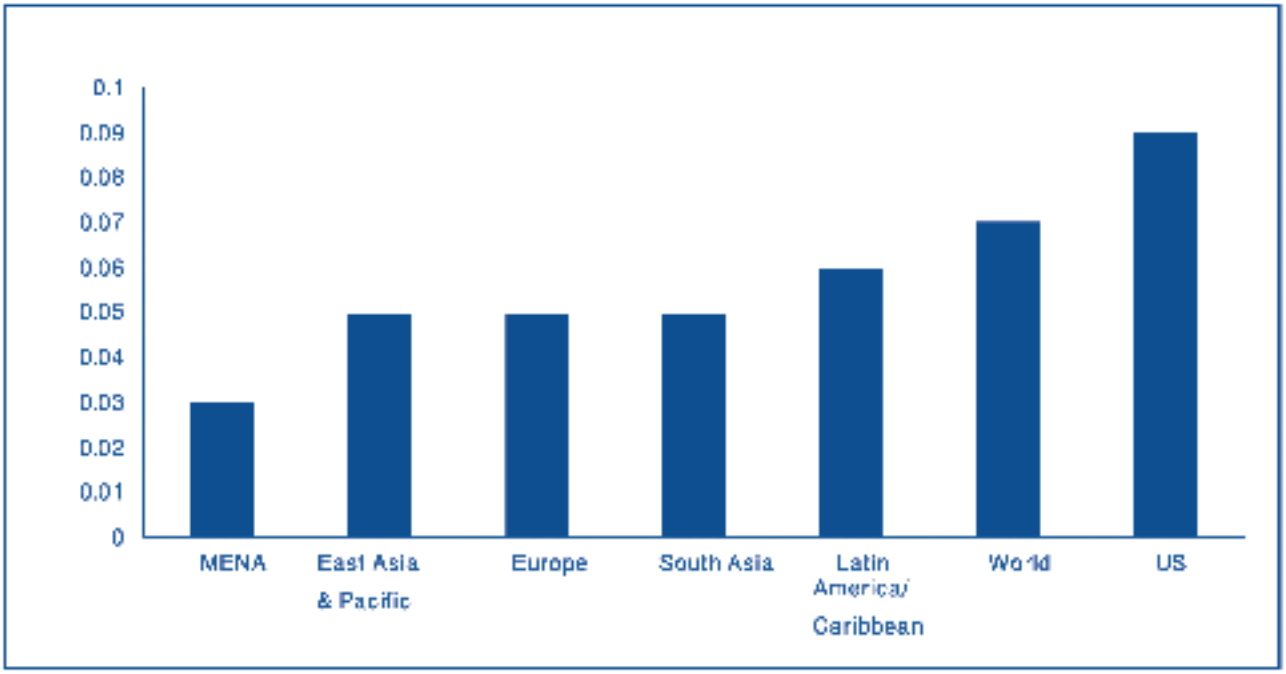


Source: WDI 2007



IT spending as a percentage of GDP also is still low compared to the global average, just 4%, even though Jordan is one of the top spenders in the region compared to the MENA average of 3%.

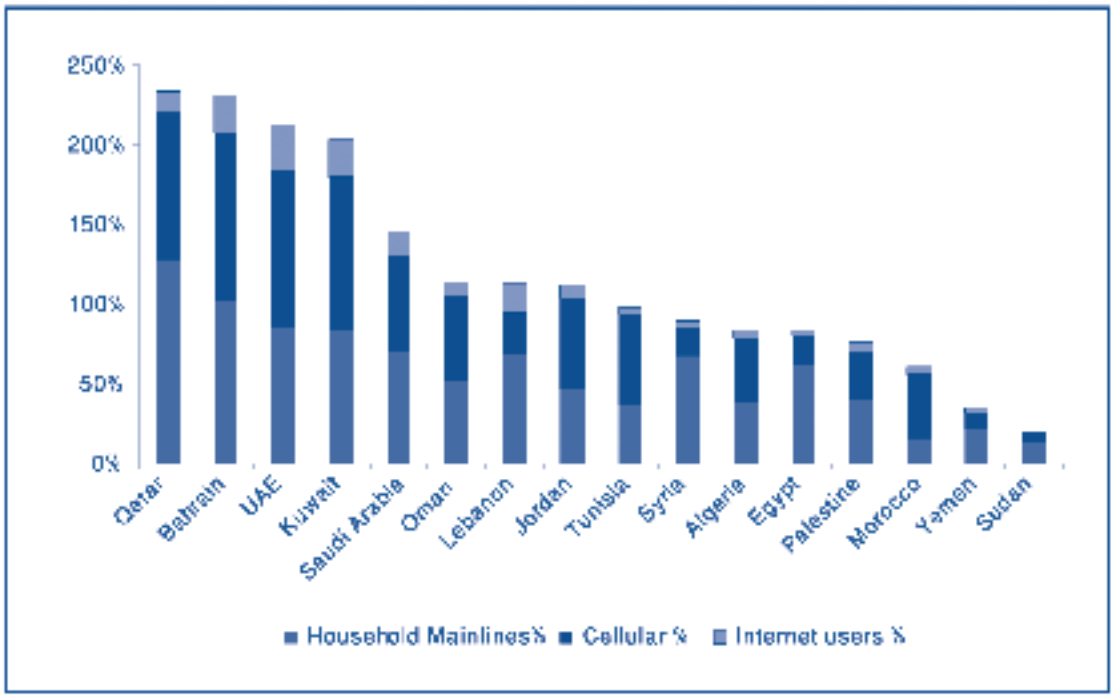
Figure 4.14 - ICT Spending as % GDP (2004)



Source: WDI 2007

Within the region, Jordan performs relatively well. Taking into account all 3 measures of fixed line, cellular, and internet penetration, Jordan ranks about average in the region. The Total Country Connectivity Measure (TCCM)[59] for 2005 ranks Jordan 8th position out of 16 countries in the region.

Figure 4.15 – Total Country Connectivity Measure (TCCM) 2005



Source: From the presentation on 'Challenges Confronting Implementation of E health, Jordan IT Forum 2006

[59] Prepared by the Arab Advisors Group

As previously mentioned, the different stakeholders in the region recognize the importance of this sector and IT usage and adoption of technology have been increasing with a large number of initiatives on the part of the government, industry, and academia alike.

One of biggest areas of potential growth for the region is to develop Arabic digitized content, the scarcity of which is considered to be one of the reasons for the lack of greater internet usage. While Arabic speakers comprise 5% of the global population, Arab web pages constitute only 0.1% of the total number of the entire internet. Egypt contributes the largest amount of content on the internet in the region but on 12% of its contribution is in Arabic. Syria posts the largest share of its web pages in Arabic (94%), followed by Saudi Arabia (67%).[60] In recent years, the region has undertaken a number of initiatives to overcome this constraint through specific Arabic software development: online newspapers, translations of rare manuscripts, and heritage books are but a few examples. Yet, it remains inadequate and Arabic software development is an area that will have to expand in the future.

In the summary table below, Jordan is benchmarked with IT industries in the region and internationally. Not all countries track and disseminate the same sets of indicators. The blanks in the table are due to these inconsistencies. In most cases, the numbers do not come from the same source - there may also be inconsistencies in definition and data collection. As a result, the benchmark data should be considered directional for comparison purposes only, not precise calculations. In all instances, the number shown is the last available year. Each number is individually sourced from country specific sources. A more extensive benchmarking table and individual sources can be found on the Jordan Competitiveness Observatory website.

Table 4.1 –ICT Benchmark Indicators

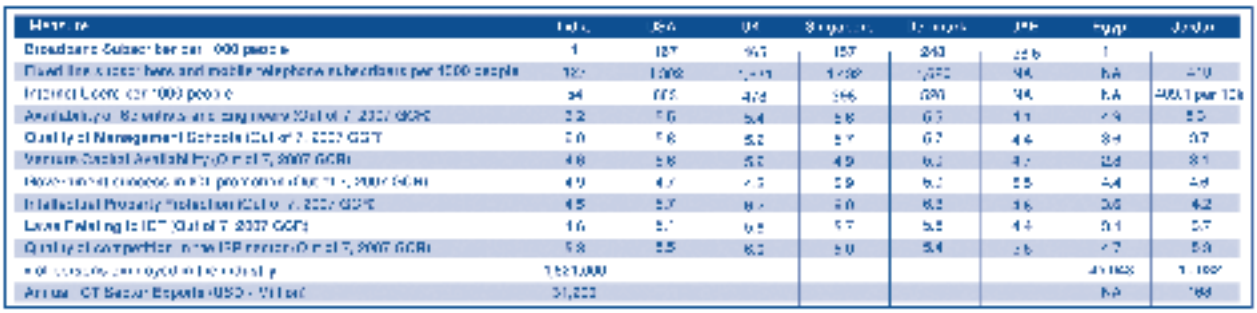


Table 4.2 – Global IT Report 2006-2007 Rankings

Indicator/Benchmark	Source	Ranking
Network Readiness Index (NRI) 2005-06	World Economic Forum	UAE (28), Egypt (63), Jordan (47)
EIU E-Readiness Rank 2006	Economic Intelligence Unit 2006	UAE (30), Egypt (53), Jordan (54)
GCI Innovation Rank	World Economic Forum	UAE (40), Egypt (62), Jordan (64)
Maturity Level in Information Society, 2006	UN-ESCWA	UAE (1), Egypt (7), Jordan (3)
UN E-Government Readiness Rankings	UN 2005	UAE (42), Egypt (99), Jordan (58)
Arab country with greatest potential to become innovation hub in region	Moutamarat, INSEAD & PwC survey	UAE (1), Egypt (2), Jordan (5)

The next part of this report discusses the key trends and initiatives being undertaken in the IT sector in the main comparator and competitor countries to Jordan.

United Arab Emirates

The UAE is considered the forerunner in the region in terms of network readiness, maturity level of the information society, and the potential to emerge as a regional innovation hub. The following table indicates some of the benchmarks and indices on which UAE scores ahead of other countries in the region.[6]

One of the reasons for being at the forefront in the IT sector has been the large emphasis placed on innovation as a driver of growth and competitiveness. The UAE government, industry, and other stakeholders work together though increasing public and private sector cooperation to expand the usage and supply of innovative IT services. The IT market was estimated at USD $1.4 billion at the end of 2005, and is anticipated to reach USD $2.2 billion by the end of 2008. Some of the innovative initiatives in the UAE are described below:

- To increase computer literacy in Dubai, the government has launched an eCitizen certification program aimed at increasing public awareness and e-government services usage.
- The Dubai Media City was launched in 2000 followed by the creation of the Dubai Internet City (DIC) and the Knowledge Village with the major aim of creating a cluster of educators, incubators, logistics companies, multimedia businesses, telecom companies, software developers, and VCs in one place. The DIC is the region's first technology-innovation zone and is considered to be an economic driver not only for Dubai, but for the UAE economy as a whole.
- The Knowledge Village, as the name suggests, aims to foster a vibrant and dynamic learning environment that will feed the IT industry- at present, there are more than 70 educational and research institutions as partners.
- Dubai continues to develop its IT sector; the latest addition to the Dubai high-tech corridor is the Dubai Silicon Oasis (DSO) which is intended to be one of the world's leading high tech parks. Initiated in 2000, this is recognized as a success story by the IT field.
- The UAE government's commitment to its IT strategy is evident from the fact that its e-government initiative is an integral part of Dubai Vision 2010 which aims to establish Dubai as a knowledge-based economy.

Egypt

[61] Promoting Technology & Innovation: Recommendations to Improve Arab ICT Competitiveness,' Chapter in Arab World Competitiveness Report 2007

Egypt presents a potentially competitive environment for the IT industry, though in comparison across most parameters, it has yet to catch up with the UAE. The sector currently employs over 45,000 professionals and exports about USD $22 billion worldwide, accounting for about 0.04% of global exports. The number of firms in the IT industry rose from 692 to 1,716 over 2001-2005 reflecting an increase of almost 150%. At present, there are close to 2,000 firms in the industry. [62]

Egypt has been promoting and expanding IT usage in the country. For instance, it has been constantly upgrading its connectivity, taking it from 850 Mbps to 2060 Mbps in a year- an increase of almost 150%. However, on almost all parameters reflecting IT usage and penetration, it falls behind Jordan. As we have discussed earlier in this section, the TCCM- the total country connectivity measure- for 2005 that brings together IT usage, ranks Egypt far behind in the region at 12th position. The low IT spending as a percent of GDP of the country could be a cause for this situation, and again reinforces the requirement in this region to invest more heavily in the IT sector.[63]

Egypt has been focusing on expanding IT education and creating a cadre of skilled and educated IT professionals. 66% of schools in Egypt were connected to the internet in 2004 compared to 18% in Jordan.[64] In an executive opinion survey of the World Economic Forum in 2004, the availability of scientists and engineers was ranked and while UAE scored at 4.3, Egypt ranked higher at 4.9. This is reflected in the rankings in the Global IT Report 2006-07 which puts Egypt at 40th place as compared to UAE at 80th. However, the quality leaves much to be desired. On parameters of quality of research institutions, management schools and overall university industry linkages, Egypt ranks far behind UAE .[65]
An example of the potential of the country's IT sector is given by the fact that Egypt hosts the largest regional software sector as a share of IT. However it has a piracy rate of 65%, which if reduced to 10%, could nearly double the size of this sector by 2009.[66]

India

India continues to be the global leader in provision of IT services in the world, with an IT sector estimated at USD $30 billion comprising 3,500 IT firms. India's IT exports account for about 65% of industry revenue and hold 25% of global market share.[67] It has been ranked as the most favored destination globally for outsourcing.[68]

India's primary competitive advantage comes from its abundant pool of English-speaking and highly qualified human capital. The country had a pool of 1.3 million IT graduates, and 1.7 million IT diploma holders that the IT industry could tap. It ranks 4th in the world in its availability of scientists and engineers according to the Global IT Report 2006-07. This has been possible due to positive interventions by all the stakeholders in the industry- the government, the private sector and the academia, who are increasingly working together to provide quality IT education at all levels of schooling. India ranks 3rd in its quality of management schools and 7th in the quality of its math & science education. Its overall education system also ranks very high, holding the 25th position. There are about 4,000 private training institutes for IT, over 300 universities and 16,000 colleges offering IT related courses and of course the now world famous Institutes of Technology (the IITs) that contribute to the large pool of human resources feeding the industry.

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62 Ministry of Communications & Information Technology, Egypt
63 Promoting Technology & Innovation: Recommendations to Improve Arab ICT Competitiveness,' Chapter in Arab World Competitiveness Report 2007
64 ibid
65 Promoting Technology & Innovation: Recommendations to Improve Arab ICT Competitiveness,' Chapter in Arab World Competitiveness Report 2007
66 Promoting Technology & Innovation: Recommendations to Improve Arab ICT Competitiveness,' Chapter in Arab World Competitiveness Report 2007
67 Strategic Review 2006: The IT Industry in India, NASSCOM
68 Global Services Location Index 2007, AT Kearney

Another critical source of competitive advantage for India is the spatial or cross-country linkages it has built with its expatriate and emigrant IT population around the world, particularly in the US. Approximately 40% of the start ups in Silicon Valley in the US over the years have had one person of Indian origin. With an increasing reversal of brain drain, these emigrants are returning to India to set up their own ventures and in this wake contributing to critical knowledge, technological, and financial spillovers.

However, India's low cost advantage is continuously being eroded as other countries like China and Mexico catch up. Hence, the IT industry in India is consciously starting to work on innovation and provision of higher value added products to remain competitive. There are increasing examples of Indian MNCs who are creating software products for the banking & financial industry that are being marketed and used in countries worldwide. These MNCs are also undertaking mergers and acquisitions across the world to adopt cutting edge technology and R&D. However, R&D in the IT industry is a major disadvantage for the Indian industry that may slow down its growth in the future.

Another potential future constraint for the industry could be the inadequate tapping of domestic demand, given India's large population and its potential to generate revenues. This has been partly due to the low penetration rates of IT usage in the country- PC penetration is a mere 1.1 per 100 and internet usage is also low at 5 per 100 inhabitants.[69] Mobile telephone subscriptions is about 8 per 100, while fixed line subscription is worse at around 4 users per 100 inhabitants. Such low penetration in a country of over a billion people severely constrains the industry's capacity to produce for the domestic sector- a challenge that the stakeholders will have to address to fully utilize its potential.

USA

According to an EIU report on IT industry competitiveness, the US boasts the most positive environment for IT firms in the world.[70] The industry provides scale and quality in education, infrastructure, innovation as well as legal protection giving it top raking on its IT industry competitiveness Index.

The IT industry in the US benefits from world-class infrastructure for IT: penetration levels of PC (2nd), internet (10th) and fixed line telephony (6th) are among the world's highest. Business and household spending on IT is very large- almost all of the USD $440 billion spent on hardware, software and IT services in the US was on domestic suppliers. This provides a very conducive environment for B2B and overall online services- the US accounts for about 66% of the global online spending.[7]

The US is also a pace setter in skills development for the technology sector. It has a very large proportion of graduates, scientists & engineers as well as world class universities, many concentrated in the high tech clusters of California. The country's patenting ability and quality of linkages between industry and academia are also cited as international standards. The emphasis on R&D from the private sector is a major competitive advantage for the country- the US ranks 3rd in the GCR on company spending on R&D.

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[69] Global Information Technology Report 2006-07, World Economic Forum
[70] The means to compete- benchmarking IT industry competitiveness,' Economic Intelligence Unit, 2007
[71] ibid

The ability to innovate and compete is greatly supported by a very strong regulatory environment. The US has some of the strongest IP laws and ranks 1st on the EIU's parameter of legal environment for the IT industry.

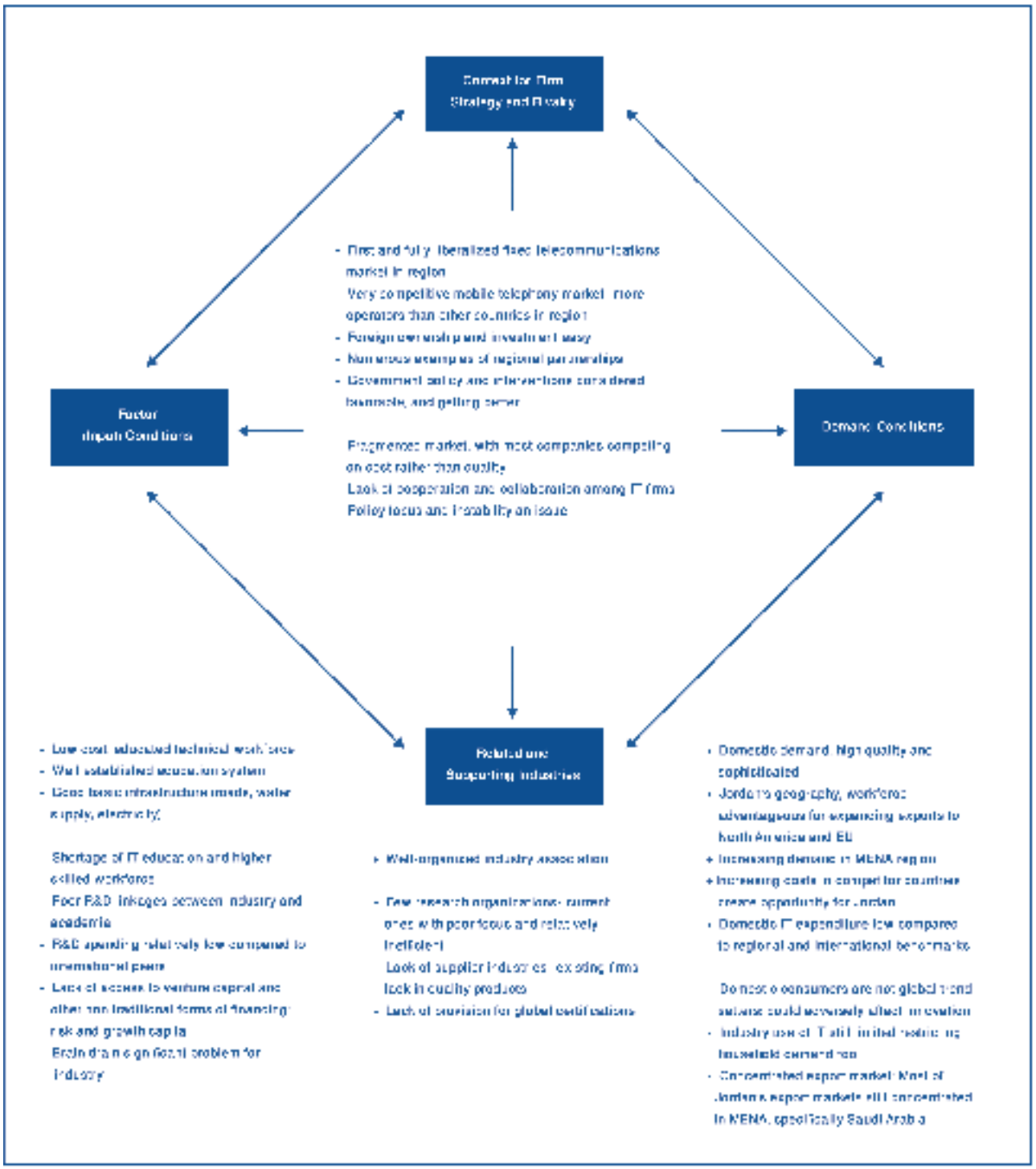
The country however does have its competitive disadvantages- an area of weakness for the industry is the adoption of high speed internet (18th) and mobile telephone subscriptions (48th) where the US is falling behind other developed countries.

Another cause of concern is the continued erosion of its cost advantage, which has led to increased offshoring by US companies to countries like India and Mexico, and has been the focus of much debate in recent years. However, competing on cost is a short term proposition, and the US should and is looking to move up the value chain through continued innovation and sophistication in product development.

5. State of Competitiveness

This section examines the state of some of the factors that determine the competitiveness of the IT sector and highlights the issues that are currently or may soon become obstacles to further growth.

Figure 4.16 - Porter Diamond for the ICT Sector



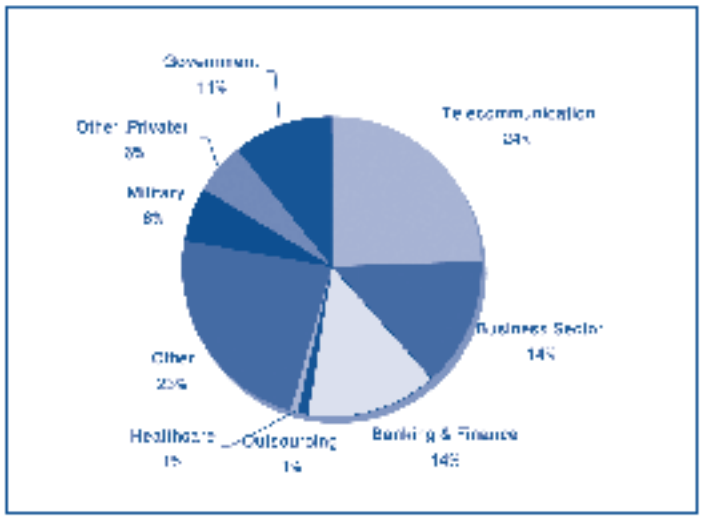
5.1 Demand Conditions

The domestic market in Jordan is the main source of IT revenues. In 2006, of the total sector revenues of USD $770 million, approximately 75% came from the domestic sector.[72] This share has, however, been decreasing over the last few years, albeit only marginally. Given the constraints of the small market size of the country, Jordan needs to push outwards in the region and globally to establish itself as a favored IT destination.

Domestic Market

In the domestic sector, the share of different consumer groups is given below:

Figure 4.17 - Share of Domestic Demand of ICT (2006)



Source: INTAJ, 2006

As can be seen, telecommunications is the biggest source of domestic revenues (24%), followed by the banking and finance and business sector together (28%) and then government (11%). The healthcare segment is very small but growing fast due to pressure to adopt more IT practices.

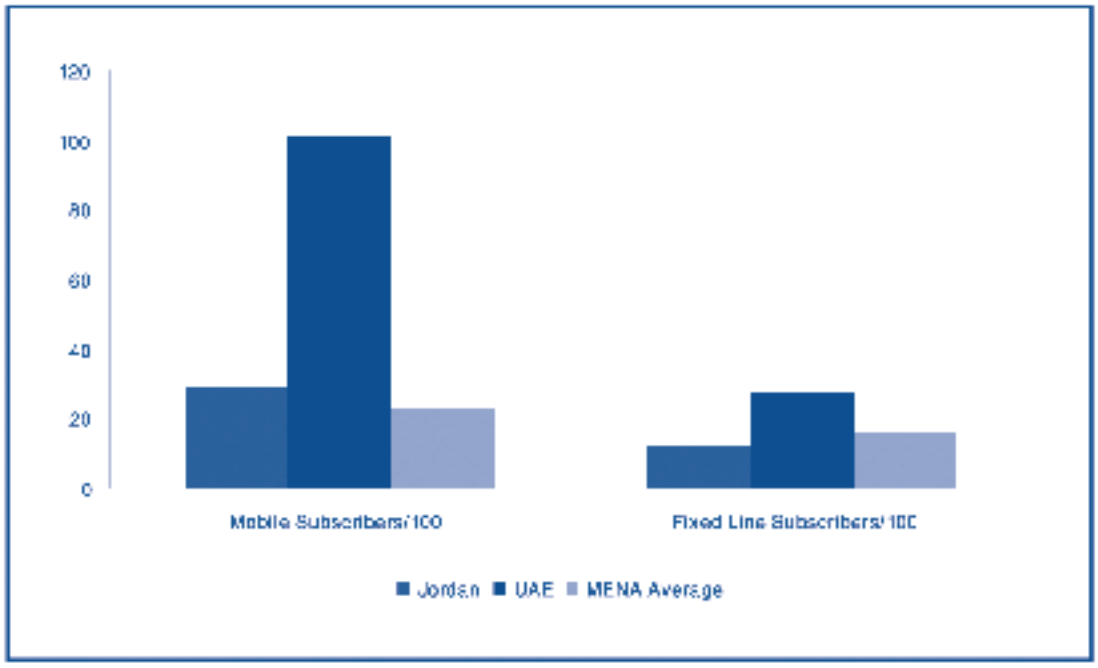
Telecommunications

Demand in the telecom sector comes mainly from the hardware segment, and the services (both fixed and mobile telephony). Jordan has a large base of fixed line users, 0.67 million subscribers at the end of 2005 representing a penetration rate of 12.2%. However, this segment has been growing at a negative growth rate over the last 5 years. It is the cellular segment that has been growing exponentially at around a CAGR of 40% over 2001-2005 with a subscriber base of 3.13 million consumers. Just from 2004, this has meant a doubling of the penetration rate from 28% to 57%.[73]

[72] In contrast, the Indian IT sector is export driven, with the domestic market contributing only about 35% of share. Unlike Jordan, India needs to increasingly concentrate on its domestic market to tap the tremendous potential of its large market size.

[73] Annual INTAJ Statistics, 2006, Jordan

Figure 4.18 -Levels of Telecom Usage



Source World Development Indicators, 2006, Global IT Report, 2006-2007-World Economic Forum.

Banking / Finance & Healthcare

Jordan is considered 'over-banked' for its size and this has resulted in fierce competition in the financial sector. One way of beating competition has been to embrace IT services through Internet banking, ATM centers,[74] and online payment systems among others. The business sector also comprises the line functions of accounting, payroll, HR, and logistics across different industry segments that are now being organized using IT. Together they account for 28% of domestic revenue.

In healthcare, aggressive initiatives have been undertaken including telemedicine, teleconferencing, and implementation of healthcare information technology systems. For example, in 2004, the King Abdullah University Hospital implemented a high-end workflow system called MEDICOM that replaced the existing manual processes within the hospital, addressing critical areas such as ordering, prescribing, and charting. In the process, it improved operational efficiency and sped up patient flow from scheduling to treatment to check out. This emphasis on making the healthcare sector more efficient is in line with the country's aim of marketing itself as a preferred destination for medical tourism.

However, according to the e-readiness report prepared by the MoICT, diffusion of IT in business is very limited and represents one of the major weaknesses in preparing the country for becoming competitive in IT. This is also evident from a research study cited in a UN report on IT in the MENA region;[75] e-commerce, defined as use of IT between businesses (B2B) and between businesses and consumers (B2C), accounts for about 7% of GDP globally. In comparison, the UAE has the most developed e-commerce market in the region accounting for about 2% of GDP. Jordan is insignificant with e-commerce being less than 1% of GDP.

[74] There are about 540 ATMS in Jordan. An example of e-banking is Visa Jordan's operations which at the end of 2004 amounted to 300 million JD from over 13000 commercial facilities. From 'National Profile for the Information Society in Jordan,' UNESCWA

[75] 'Regional Profile of the Information Society in Western Asia,' UNESCWA report, UN, October 2005

Government

The Jordanian government has been fairly proactive in stimulating and generating demand for the IT industry. This has been done through regular government contracts or through e-government initiatives. Government contracts typically cover solution implementations and hardware sales. Little or no outsourcing work is generated by this sector. In 2006, this sector generated about USD $62 million in revenues: about 11% of the domestic whole. Some of the major government initiatives in IT are given in the box below.

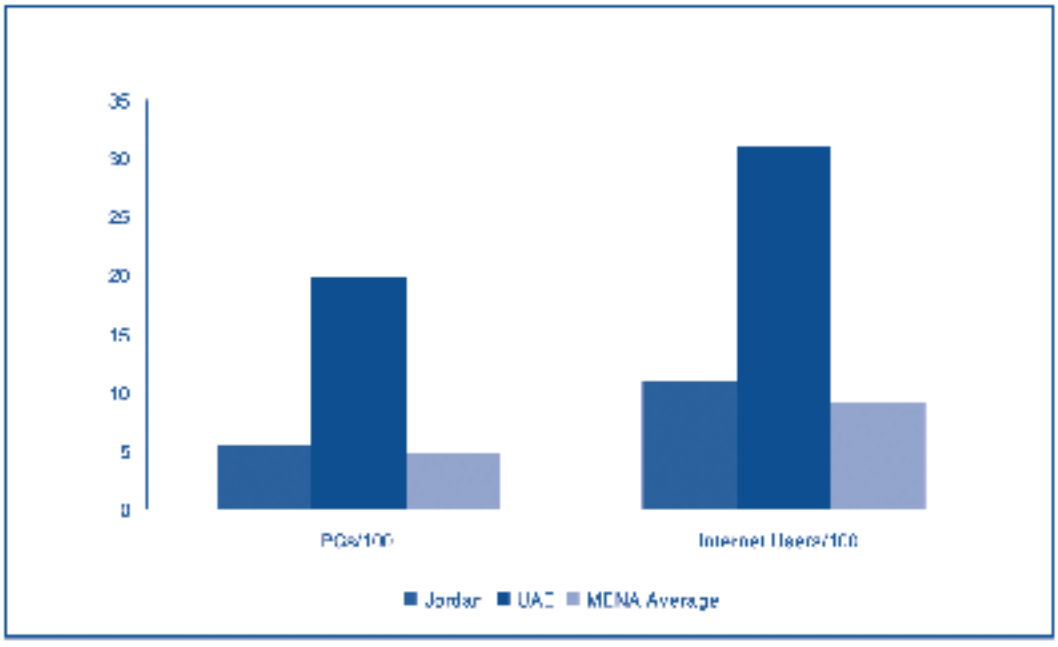
While there is little doubt about the sincerity and leadership displayed in driving government initiatives, progress is still slow and implementation is a constraint. For instance, it has taken more than 4 years to implement the so-called 'fast track projects.' IT skills and usage are restricted to about 4% of government employees, and due to the lack of an IT coordination body, there is little collaboration in the use of IT between government departments.

Household Demand

Household demand for IT services, as measured by the use of the Internet, is insignificant at around 0.5% of total domestic revenue.[76] On the demand side, this is due to the limited Internet connectivity and penetration and low PC ownership in Jordan, which in part is driven by prohibitive prices for the systems. Further, digitized Arabic content is still very limited making the use of Internet futile for those who speak no other language. On the supply side, as mentioned before, there is very little use of the Internet by the private sector to do e-business, and e-government initiatives (G2C) are only recent.

Although higher than the MENA average on PC and internet penetration, Jordan lags significantly behind the UAE - often considered the leader in the region in the IT sector. Household PC penetration is growing at 27%[77] but the number of computers per household in Jordan continues to be low, around 5.5 per 100 people. Similarly internet connectivity stands at 11 users per 100 citizens.

Figure 4.19 - Level of Internet Usage

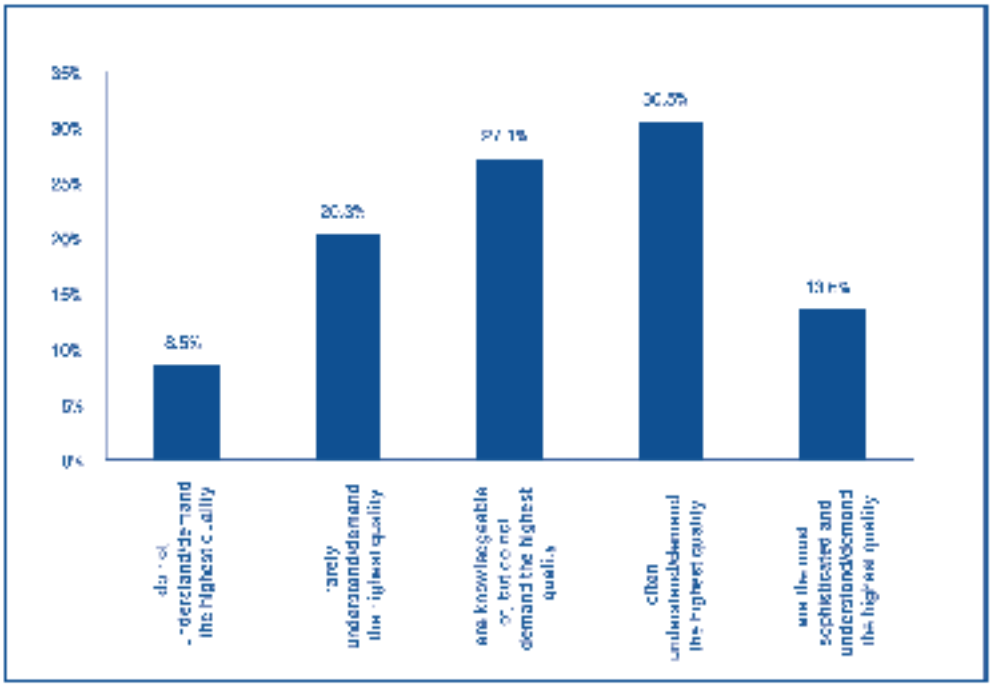


Source: World Development Indicators, 2006, Global IT Report, 2006-07- World Economic Forum

[76] Calculated from the Annual ITAJ Statistics, 2006, Jordan
[77] 'E-Readiness Assessment of Jordan 2006' Ministry of ICT, Jordan

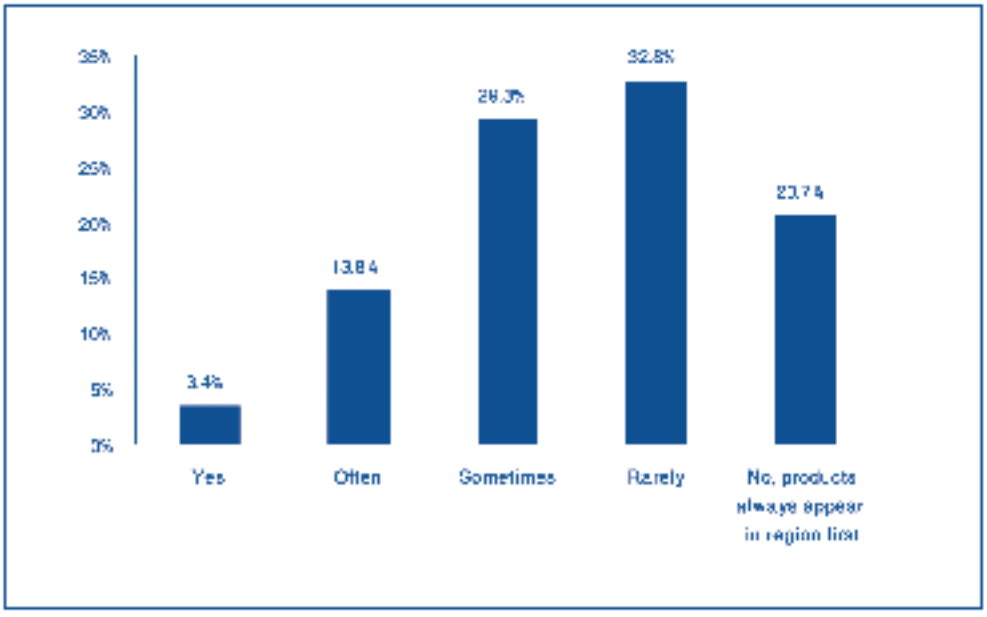
In terms of sophistication of demand, most Jordanian customers are considered to be quite exacting of quality in comparison to their peers regionally and globally, an aspect that should translate to quality products being supplied by the market. However, they are not global trend setters and this may adversely impact the rate of and need for innovation among domestic firms. This was borne out by the survey results where a majority of respondent firms said they looked outwards to regional or global firms for new product ideas rather than innovate in house.

Figure 4.20 - When compared to international & regional customers , Jordanian customers that purchase IT



Source: JNCD, ICT Stakeholders' Online Survey, 2007

Figure 4.21 - Do Jordanian consumers anticipate international trends in IT

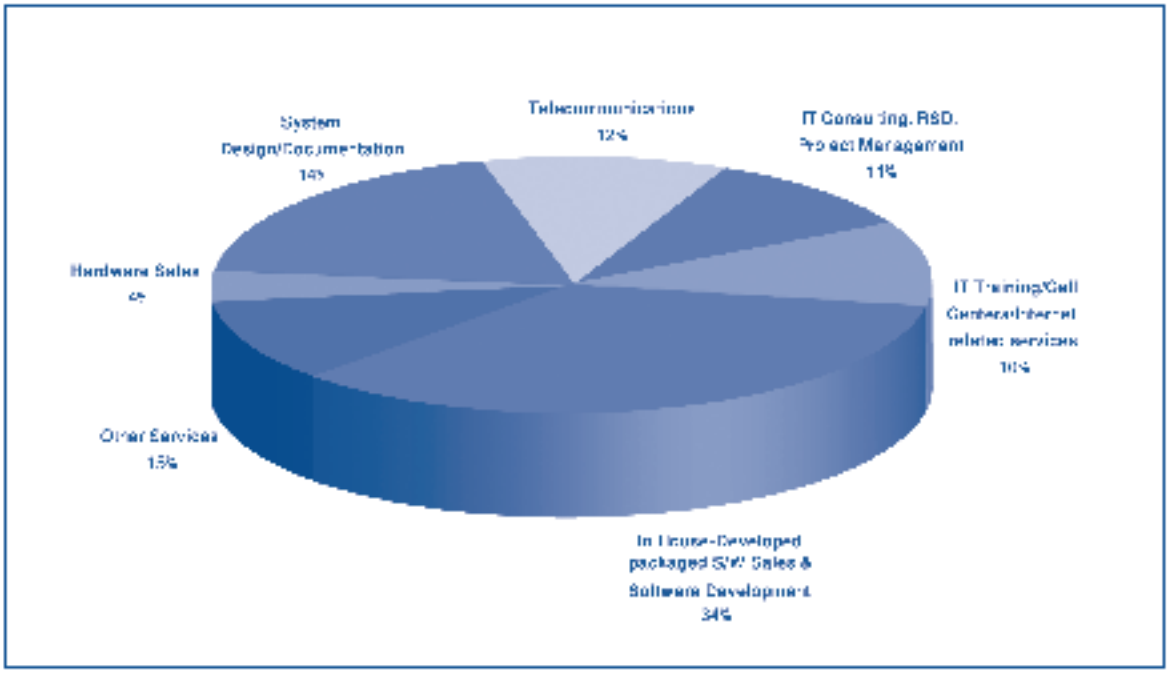


Source: JNCD, ICT Stakeholders' Online Survey, 2007

Exports

IT export revenue in 2006 was USD $192 million, having grown 18% from last year. The break down of this export revenue is provided below. The figures show that the Jordanian IT sector exports products and services across all sub segments, from the lower value added Web design, development, and administration. to the higher value added In-house Development Packaged SLW Sales Telecommunications and administration Software Development .

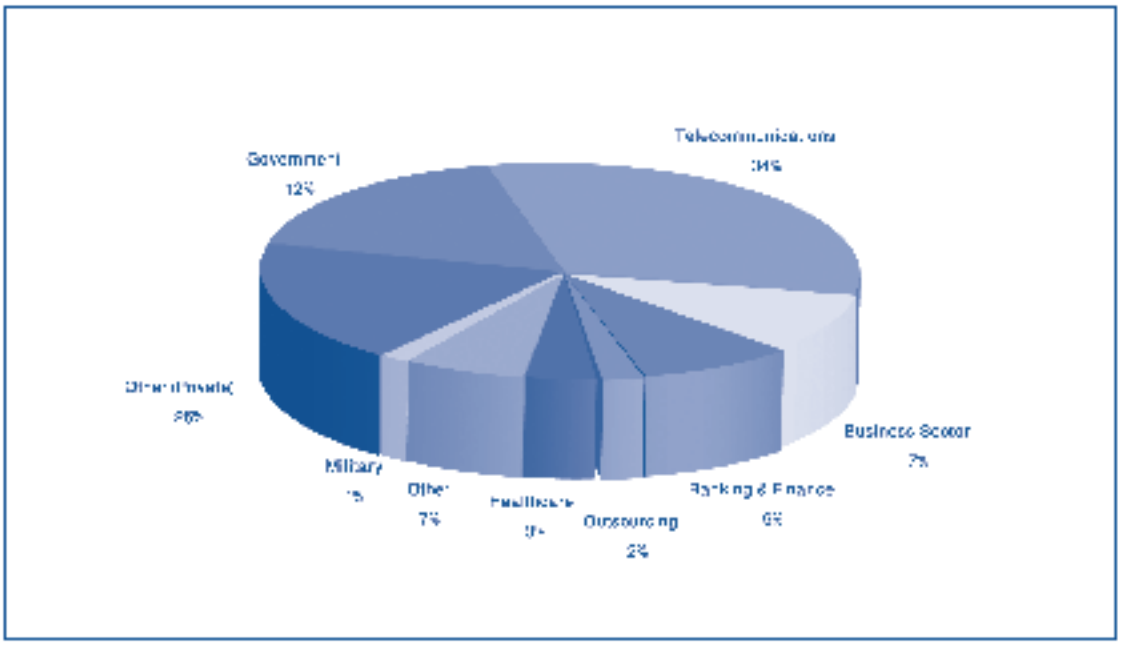
Figure 4.22 - Export Revenue (2006) by Sub Sectors



Source: Annual ICT Statistics 2006, [illegible]

The telecom industry accounts for the largest share of export revenues (34%). After this, government (12%) and education (15%) sectors make up a significant portion. Outsourcing constitutes an insignificant 2% share.

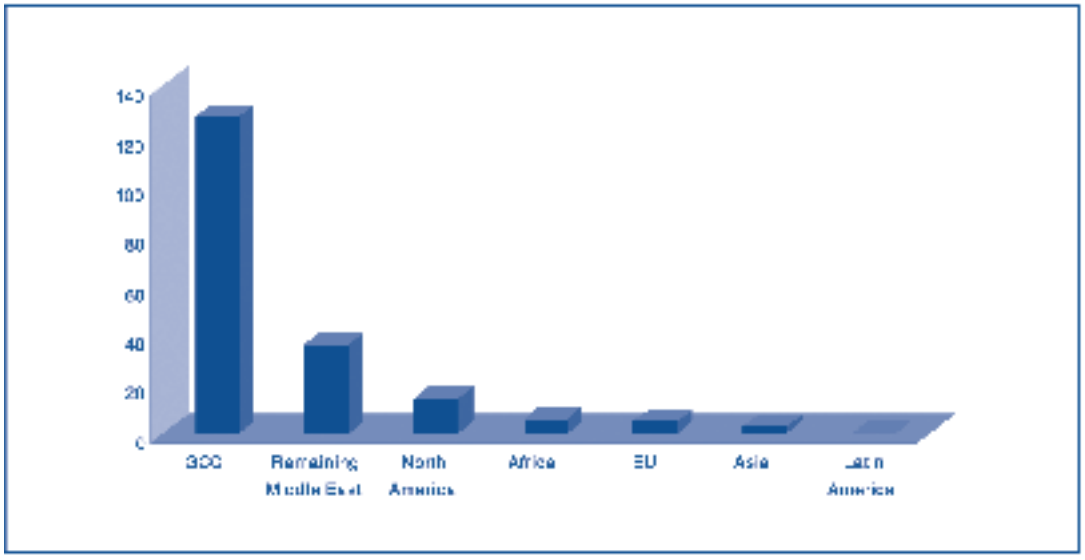
Figure 4.23 - Export Revenue by Industry Sector



Source: Annual ICT Statistics 2006, Info

Jordan's primary export destinations continue to be the Gulf countries in the region, with Saudi Arabia accounting for 32% of outgoing services. The GCC (67%) of Jordan It exports The us is only 6% of export shar.

Figure 4.24 - IT Exports by Region (USD mn)



Source: Annual ICT Statistics 2006, INTAJ calculation

The IT industry exported to some new markets (Liberia, Japan, Australia, Bulgaria, and Cyprus) in 2005. However, this has tapered off in 2006 indicating one off projects that have not continued into other contracts.

Jordan has several advantages in servicing the region and the major markets of the US & EU. Geographically it is in advantageous time zones for the EU, US, and Asian markets. Jordan's cultural and linguistic similarities give it an edge to export to the Arab market. The country also has a large base of English speaking workers representing a huge potential for international call centers.

At the same time, the dominant IT exporters such as India and China are facing skill shortages and cost advantage erosions. This represents an opportunity to countries such as Jordan to capture markets. The potential and existing export markets in the region are growing exponentially in their demand for IT products and services, again providing an opportunity for Jordan to expand its export base. Together these present tremendous opportunities for the country to push its IT sector.

Outsourcing

As mentioned earlier, outsourcing comprises a small share of about 2% of export revenues for Jordan. However, this is a segment with a tremendous potential in the future. Jordan is ranked 2nd in MENA (after Egypt) and 14th worldwide as a favored destination for offshoring services according to the AT Kearney Global Services Location Index (GSLI) that measures the attractiveness of a location for offshoring services.[78] Jordan has maintained this rank from the earlier ranking in 2005.

Compared to the more favored Egypt, Jordan performs better on business environment and is almost the same on financial attractiveness, which takes into account compensation, regulatory, and infrastructure costs. Of the 3 categories measured, Jordan's rank is lowest in people and skills availability. This reinforces the gap in IT education that needs to be filled and the push it could give Jordan in becoming the choice location for contact centers in the future.

5.2 Factor Conditions

Jordan's IT industry faces a mixed pool of resources at its disposal for being competitive. While the physical infrastructure is comparatively superior to the region and an advantage, the country has not yet been able to tap its talented human capital for use in the industry. Similarly, while the country has the potential for undertaking R&D, the spirit and environment for cutting edge research is very low. Sources of finances for the IT industry are still limited and unsupportive of risk taking.

Human Resources

An educated population is one of Jordan's main strengths. The country has achieved over 90% literacy and its education system is considered to be solid and strong. With an expenditure of 5.6% of GDP on education, Jordan is one of the highest spenders in the world in this sector.[79] There are 8 public universities, 12 private universities and 21 community colleges, graduating over 4,000 IT graduates every year.[80]

A large part of its labor force is educated and bilingual, speaking Arabic and English. This means that Jordan has a potential competitive advantage in the IT sector, both to cater to the Arabic speaking market in the region, and the English-speaking North American, European, and Asian markets. The following rankings from the Global IT Report 2006-07 show Jordan's comparative strength in its education infrastructure:

[78] Offshoring for Long Term Advantage' The 2007 AT Kearney Global Services Location Index: The GSLI measures the locations on 3 criteria- financial attractiveness, people & skills availability and business environment.
[79] Jordan's e-readiness report 2006
[80] Brochure on 'Invest in ICT in Jordan 2005' MoICT

Table 4.2 – Global IT Report 2006-07 Rankings

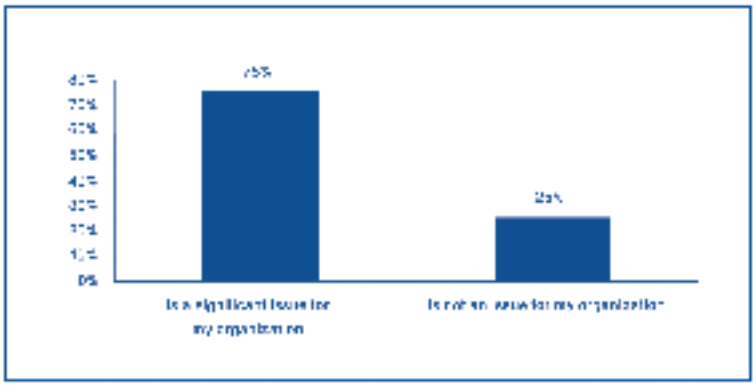
Tertiary enrollment	47
Quality of education system	44
Quality of math & science education	56
Availability of scientists & engineers	26

Source : G oba T Report, 2006-2007, GCR 2006

However, despite these favorable statistics, in 2006, there were only about 10,712 IT employees in the country as compared to over 45,000 in Egypt. While the number has increased over the last few years, it is still relatively small. This may be due to several reasons.

Jordan has to contend with the issue of 'brain drain' as large parts of its skilled population emigrate to better opportunities elsewhere in the world. Jordan ranks poorly, 88th among global benchmarks in respect of retaining its qualified labor force.[8] 75% of the firms in the sector consider brain drain a severe constraint to their ability to retain the best talent.

Figure 4.25 - Brain drain, the migration of skilled and experienced technical professionals:



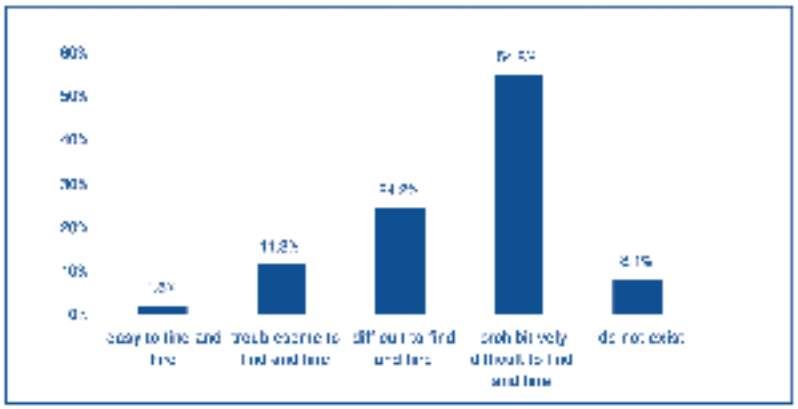
Further, there have been scarce linkages between academia and industry historically. This has not only meant a lack of synergy between the need of the IT industry and the skill set of the labor force emerging out of academia, but also a lack of awareness of a potential career in this sector. This deficiency will need to be addressed if the country wishes to compete and engage even more in the higher value added subsectors such as product development, project management, and R&D.

Besides quantity, there is a constraint on quality too, despite the availability of scientists and engineers. Over 65% of the IT labor force is engaged in technical functions, with only a small handful working in management positions. There is a big shortage of non-IT skills such as business development, financial management, and advanced business skills. This has been born out by the results of the survey conducted with firms in the IT sector. A majority of them find a scarcity of professionals at the non-technical levels.

[81] GCR 2006-07

There is also a shortage of IT infrastructure in education institutions, with very limited internet connectivity in schools and low computer per student ratios.

Figure 4.26 - Skilled and experienced management experienced technical professionals:



Source: JNDO, ICT Stakeholders' On-line Survey, 2007

Government, industry, and academia have recognized the need for building IT talent and a number of initiatives have been started by different stakeholders to address the quantity and quality of human capital. For instance:

- **The National Broadband Network (NBN)**, launched by the government in 2003, has already connected the 8 public universities and over 200 public schools through a high speed fiber connection.
- The Jordan Education Initiative (JEI,) launched in 2003, is a public-private partnership of 45 global and Jordanian business entities, NGOs, and the Jordanian government. Under this program, 100 Discovery Schools have been set up that are broadband connected and operate through e-curriculum. The aim is to enable students to compete globally in the knowledge economy and to train teachers and administrators in the use of technology. This program is being replicated in other parts of the world such as India, Bahrain, and most recently in Egypt.
- EDUWAVE, an e-learning platform, was introduced in pilot schools in 2004 by a Jordanian IT firm to provide a portal with tutoring tools for teachers, students, and parents.
- As part of the broader education reform program ERFKE, launched in 2002, e-education at schools and universities has been created to introduce IT courses in curricula and provide the necessary infrastructure. As a result, 2,500 schools have been provided with computer labs and over 35,000 teachers have been trained on new information technologies.

If Jordan wants to become a regional IT hub, this momentum needs to be maintained and even increased to ensure an growing supply of qualified and skilled IT professionals.

R&D Investment & Resources

Commitment and enabling environment for R&D in general is lacking in Jordan. Though higher than MENA average of 0.2% of GDP,[82] R&D spending by the government and industry is low compared to the global developing country average of 1.6% and very low compared to more developed countries. This has adversely impacted the quality of scientific institutions and will be a hurdle for competitiveness in a fast-paced and highly innovative industry such as IT. Jordan's ranking on the following indicators very clearly outlines its weakness in R&D.

[82] 'Promoting Technology & Innovation: Recommendations to Improve Arab ICT Competitiveness,' Chapter in Arab World Competitiveness Report 2007

Table 4.3 – Global IT Report 2006-07 Rankings

R&D Indicators	Rank 2006
Company spending on R&D	84
University-industry research collaboration	84
Quality of scientific research institutions	73
Utility Patents	79
Capacity for Innovation	75

Source: Global IT Report 2006-2007, GCR 2006

The following figures show Jordan's comparatively poor standing vis-a-vis global and regional leaders in company spending on R&D and the private sector's capacity to innovate as opposed to imitate.

Figure 4.27 - Ranking on Company Spending on R&D: Global & Regional Leaders, Jordan

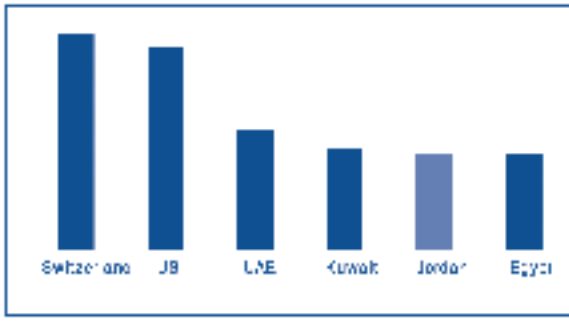
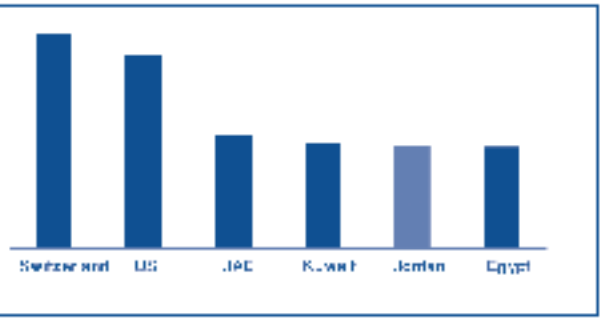


Figure 4.28 - Ranking on Business Capacity to Innovate: Global & Regional Leaders, Jordan



Source: Global Information Technology Report 2006-2007, World Economic Forum

This lack of emphasis on research is felt by most players in the IT industry. Most firms do not believe research institutions with a focus on IT exist, and those who do feel that this research neither supports nor enhances the sector's competitiveness.

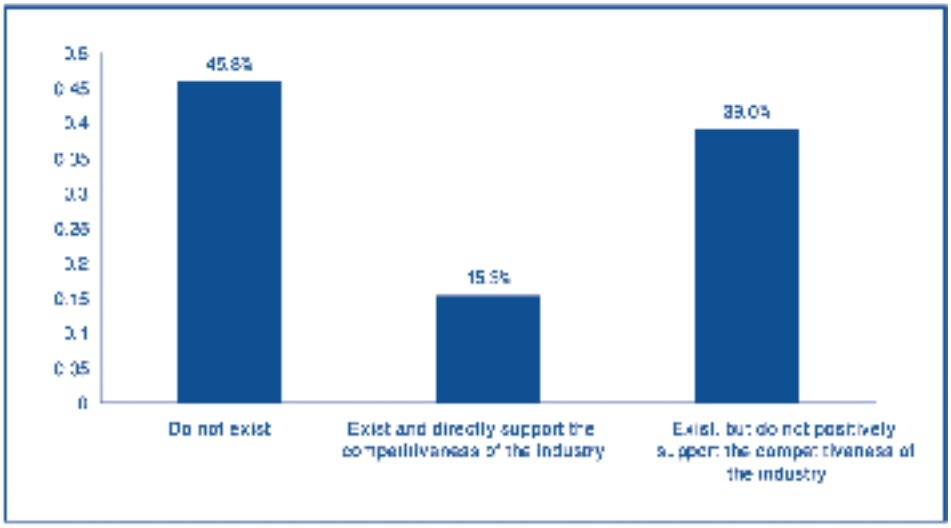
However, the government and industry have taken this as a challenge and outlined a R&D vision for Jordan over the next 5 years, outlining the broad steps that key stakeholders need to take through the collaborative efforts of industry, government, and academia. Among other goals, it has targeted an increase in its R&D spending to 1% of GDP by 2012.[83]

[83] 'Research & Development Strategy for Information And Communication Technology 2007-2010' MoICT

Financial Resources- VC, domestic IT spends, FDI

The sources of finance for the IT industry are most readily available through informal networks or through traditional sources of bank lending. Venture capital (VC) or equity financing is still very nascent and an indication of the lack of maturity of the country's financial system when it comes to sophisticated financial products beyond the traditional banking industry in supporting a dynamic and highly innovative industry such as this.

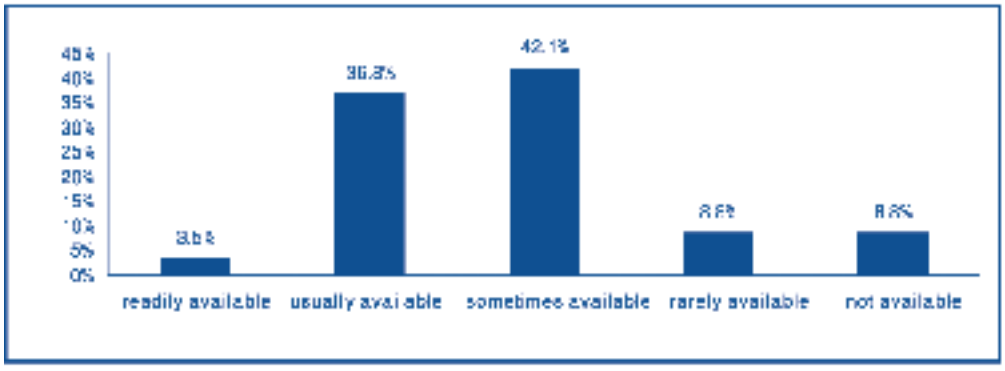
Figure 4.29 - Research institutions in Jordan focused on ICT research:



Source: JNCO, ICT Stakeholders' Online Survey, 2007

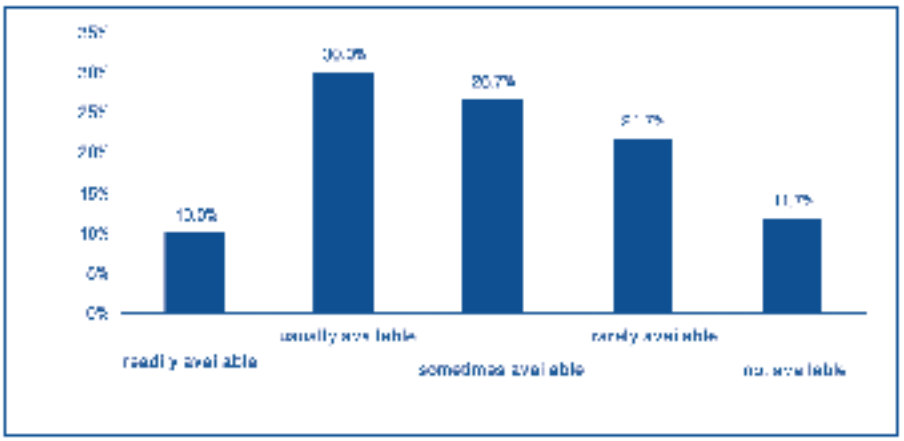
Traditional Sources- Easier credit….

Figure 4.30 - Family and friends financing network:



Source: JNCO, ICT Stakeholders' Online Survey, 2007

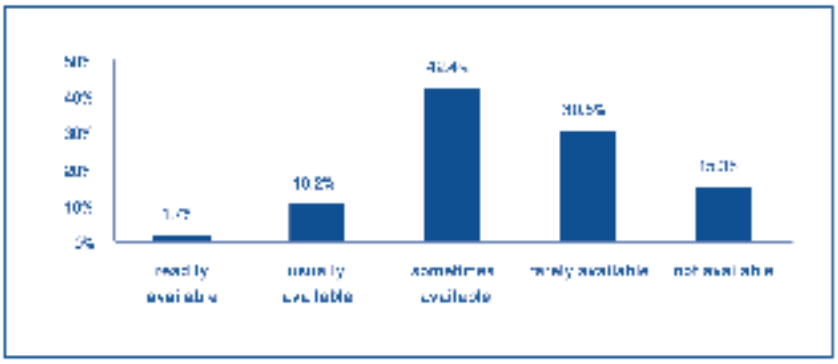
Figure 4.31 - Loans from commercial banks:



Source: JNCO, ICT Stakeholders' Online Survey, 2007

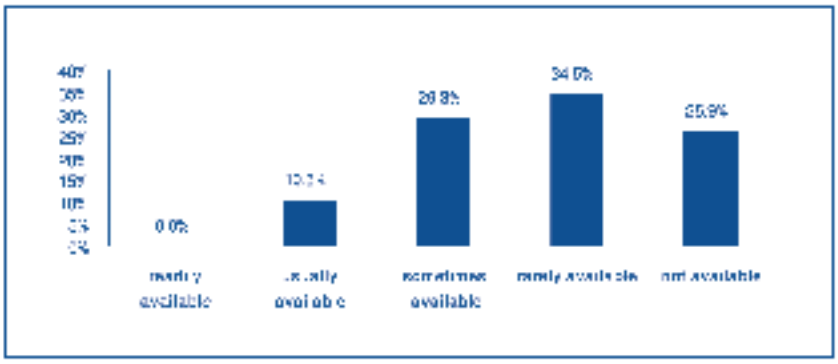
Mature Financial System – Still nascent

Figure 4.32 - Venture capital/Private Equity:



Source: JNCO, ICT Stakeholders' Online Survey, 2007

Figure 4.33 - Equity financing on a regional stock exchange



Source: JNCO, ICT Stakeholders' Online Survey, 2007

As previously mentioned, spending on IT as a percentage of GDP was around 4% in 2004,[84] higher than the average 3% for the MENA region. However, it is lower than the global average spending of 6% on IT. Per capita IT expenditure has increased from USD $150 in 2000 to USD $195 in 2005, signs of growing emphasis on this industry.

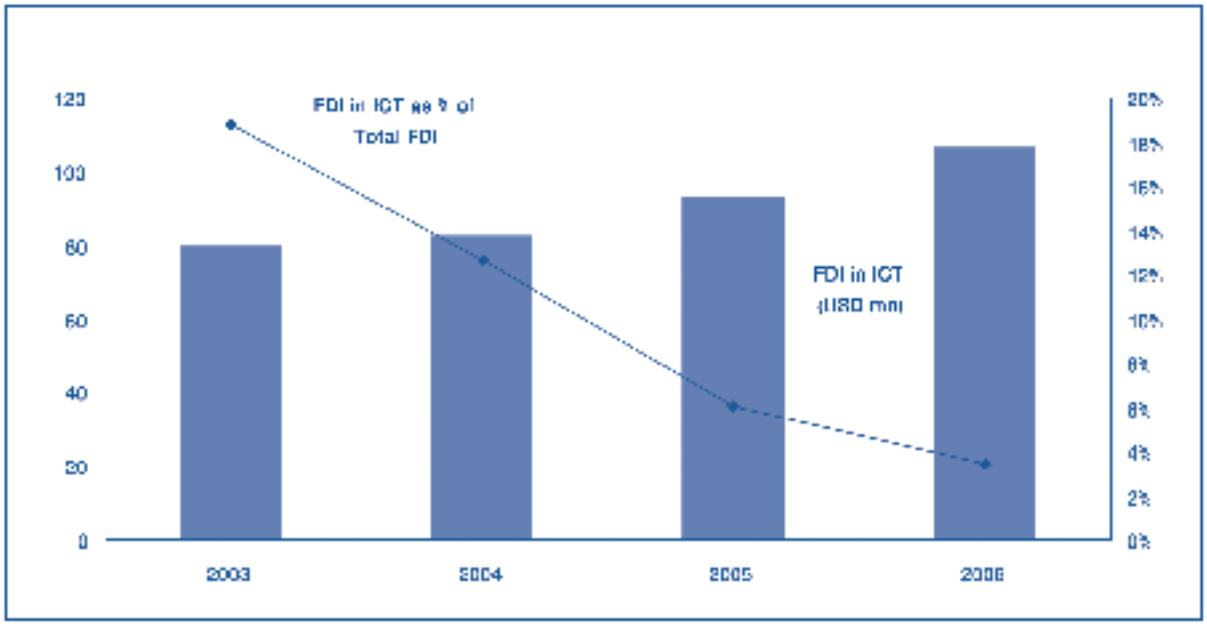
[84] UNESCWA Regional report

Credit to the IT sector from the traditional banking system needs to be made more available. For an innovative and dynamic sector such as the IT industry, venture capital and other such risk-based investment becomes a critical source of financial capital. The importance is highlighted in an HBS study which concludes that a dollar of venture capital produces 3-5 times more patents than a dollar in R&D.[85]

The VC segment of the financial sector in Jordan, like in the rest of the region, is still nascent. Reasons for this are both demand and supply based. On the demand side, entrepreneurial activity is still limited. Further, most capital flows are informal and family-based, as awareness of concepts such as venture capital is limited. On the supply side, the regulatory environment required for a VC industry is sorely missing. An OECD report on the investment climate in Jordan concludes that the current 18% rate of entrepreneurial activity in the country cannot be sustained through bank credit or informal loans, a signal for the urgent need of a VC industry.[86]

Inward flows of FDI grew from USD $120 million in 2001 to over USD $3 billion in 2006. Of this, FDI in the IT sector has increased from USD $80 million in 2003 to USD $107 million in 2006, growing at about 11% per annum. However, as a percentage of total FDI, there has been a drastic drop in IT flows.

Figure 4.34 - FDI in ICT



Source: Annual ICT Statistics 2005, INTAJ & WDI 2007, JAA Calculations

Spatial Linkages

An important factor input that may influence the competitiveness of an IT sector is the extent and strength of spatial linkages, or the role of the social capital of expatriate Jordanians. This cohort could play an instrumental role in developing the IT industry in the country through important spillovers: financial, technical, educational, reputational, and entrepreneurial.

For example, as we mentioned earlier in the comment on India, the role of Indian IT professionals based in the US has been instrumental in the development of the Indian IT sector. Indians in senior management positions in IT MNCs have influenced their entry into India. Large numbers of expatriate Indians have returned to establish

85 'Towards an Information Technology Industry in Jordan,' www.jordanembassyus.org
86 National Investment Reform Agenda' OECD

IT firms in the country thereby transferring knowledge and technical skills. Others have financed IT education and start up firms through massive infusion of capital. While most of this has been individual based, collective action also emerged several years ago through expatriate Indian organizations that formally organize activities to encourage the Indian IT industry. In response, the Indian government has also established offices in countries world wide to enable expatriates who wish to invest in the Indian industry.[87]

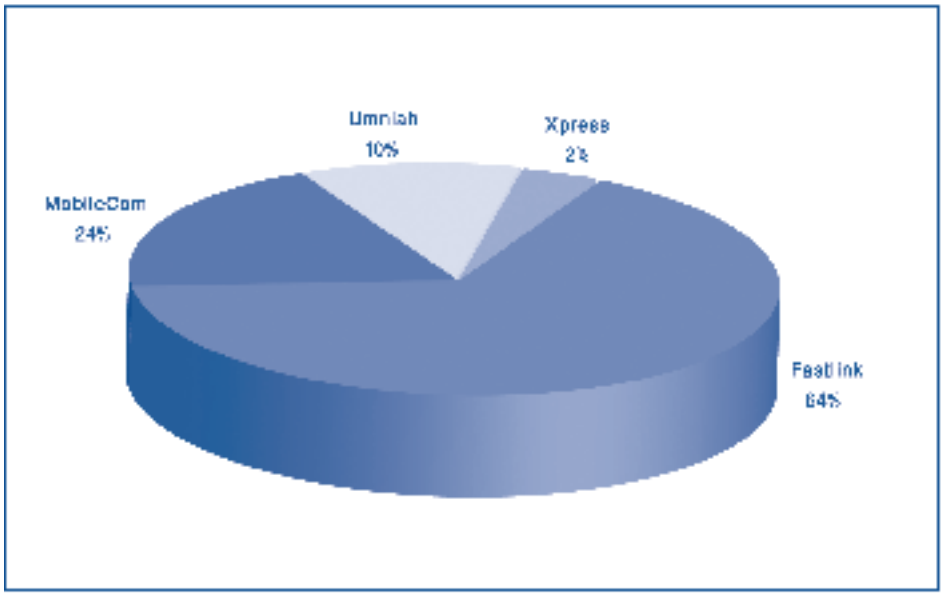
Jordan too has a large emigrant population and it is important for the business community and the government to encourage this group to strengthen the IT sector and showcase successful case examples.

5.3 Context for Strategy & Rivalry

The Jordanian Telecom market is duopolistic in nature in the fixed line segment, while much more competitive in its mobile telephony segment. Fixed line services were monopolistic until 2004 when the sole provider was the government owned Jordan Telecom. Another provider, Batelco of Bahrain, was given entry into the market thereafter. However, Jordan Telecom continues to own 98% of the fixed line market. Further, Jordan Telecom was wholly privatized in 2006 with France Telecom holding majority stake and taking over management.

The mobile market in Jordan is considered to be one of the most competitive in the region. There are currently 4 mobile operators, which is the highest number of operators in a country in MENA. (The region has 39 mobile operators over 18 countries.)[88] The initial operator was Fastlink, a joint venture with a majority stake owned by a Kuwait-based company, which was introduced in 1995. Since then, licenses have been issued to 3 more operators. However, Fastlink continues to hold the majority share of the market at 64%.

Figure 4.35 - Mobile Operators in Jordan



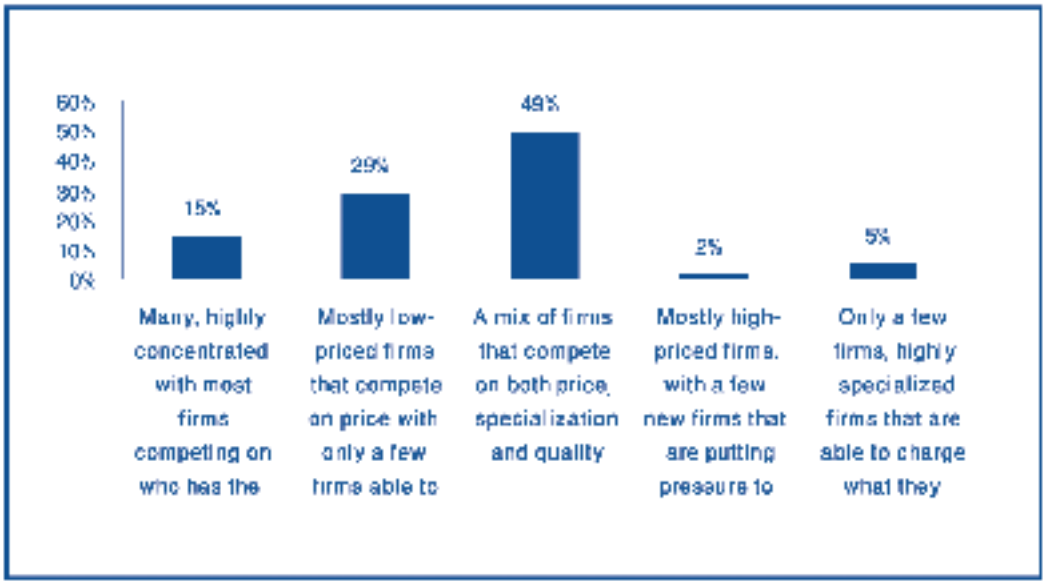
Source: Jordan Telecom Sector, October 2006, Global Investment House

On the whole the Jordanian telecom market is the first to do so, and the most liberalized in the region. The firms have private sector as well as foreign participation. These send out positive signals to the rest of the world in terms of the government commitment to making the country IT-friendly both in usage and investment.

87 Global IT Report, 2006-2007, World Economics Forum
88 Jordan Telecom Sector, October 2006, Global Investment House

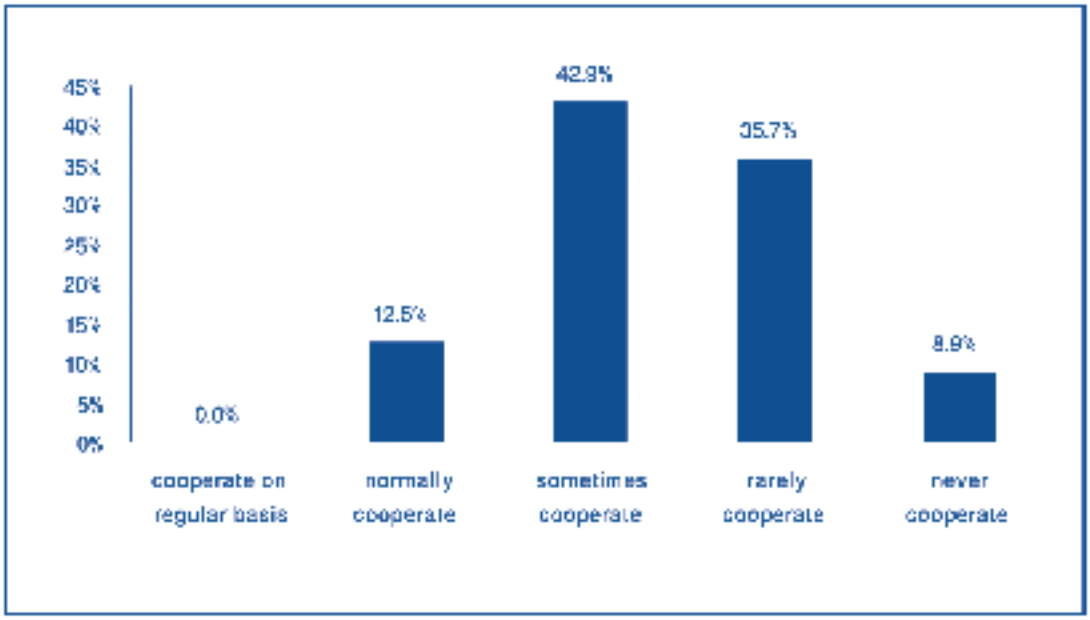
There are about 373 value-adding IT firms in the industry, and about 500 hardware and software sellers. On the basis of the survey conducted among the IT firms in Jordan, one can surmise that competition is fierce, but based on price and social networks and relationships rather than on quality. Most of this competition is domestic or regional, 75% of the firms considered their competition to be Jordanian or regional. Further, collaboration and cooperation among firms is still not very prevalent.

Figure 4.36 - Competition among firms in the ICT industry in Jordan can best be characterized by which



Source: JNCO, ICT Stakeholders Online Survey, 2007

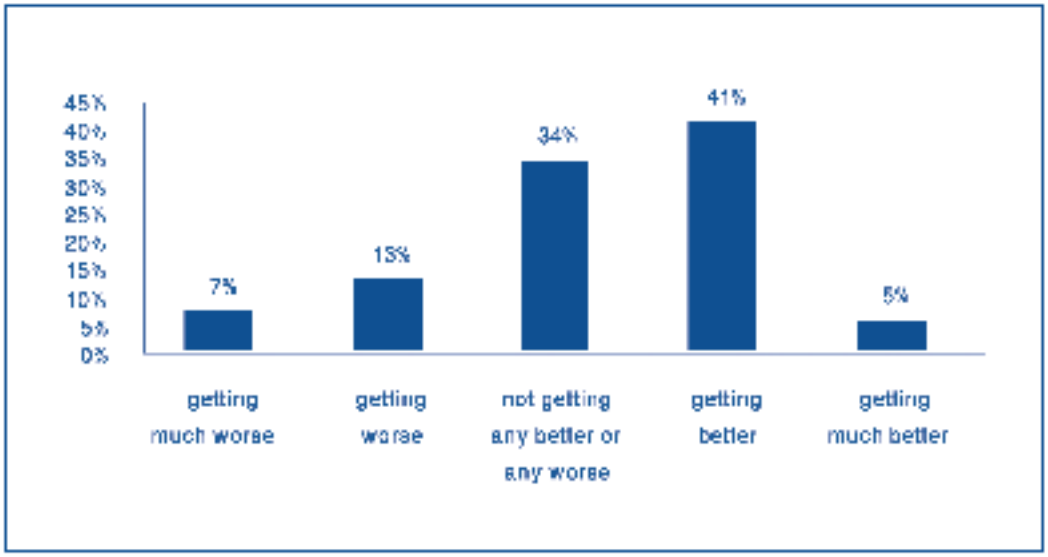
Figure 4.37 - Jordanian ICT companies:



Source: JNCO, ICT Stakeholders' Online Survey, 2007

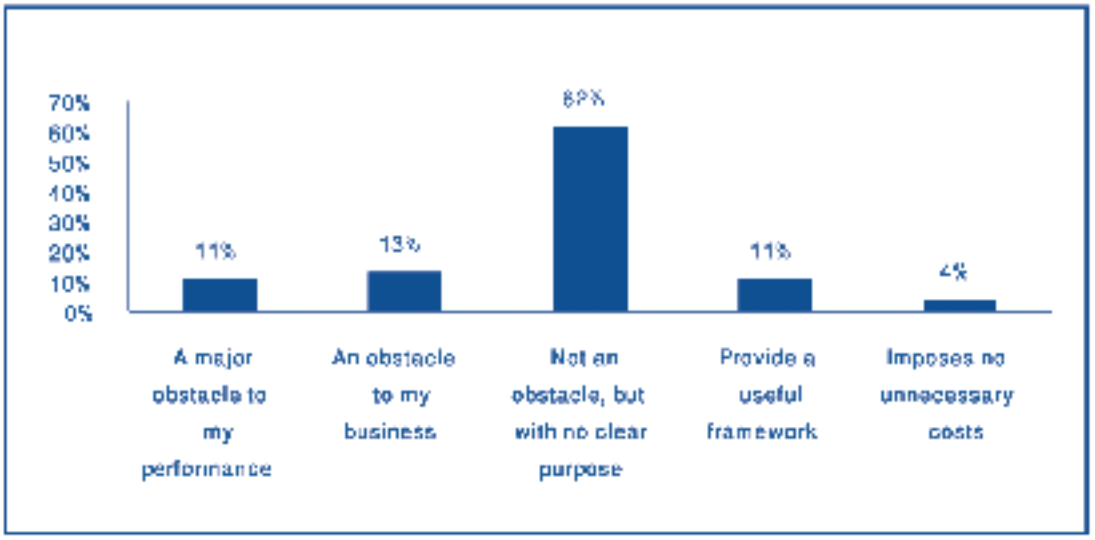
A testimony to the positive role of the Jordanian government comes from the fact that most players feel that government regulations on IT have been getting better and do not pose an obstacle to doing business. However, there is doubt about the clarity of the purpose of this regulation.

Figure 4.38 - Government regulations are



Source: JNCO, ICT Stakeholders' Online Survey, 2007

Figure 4.39 - Government regulations of ICT are



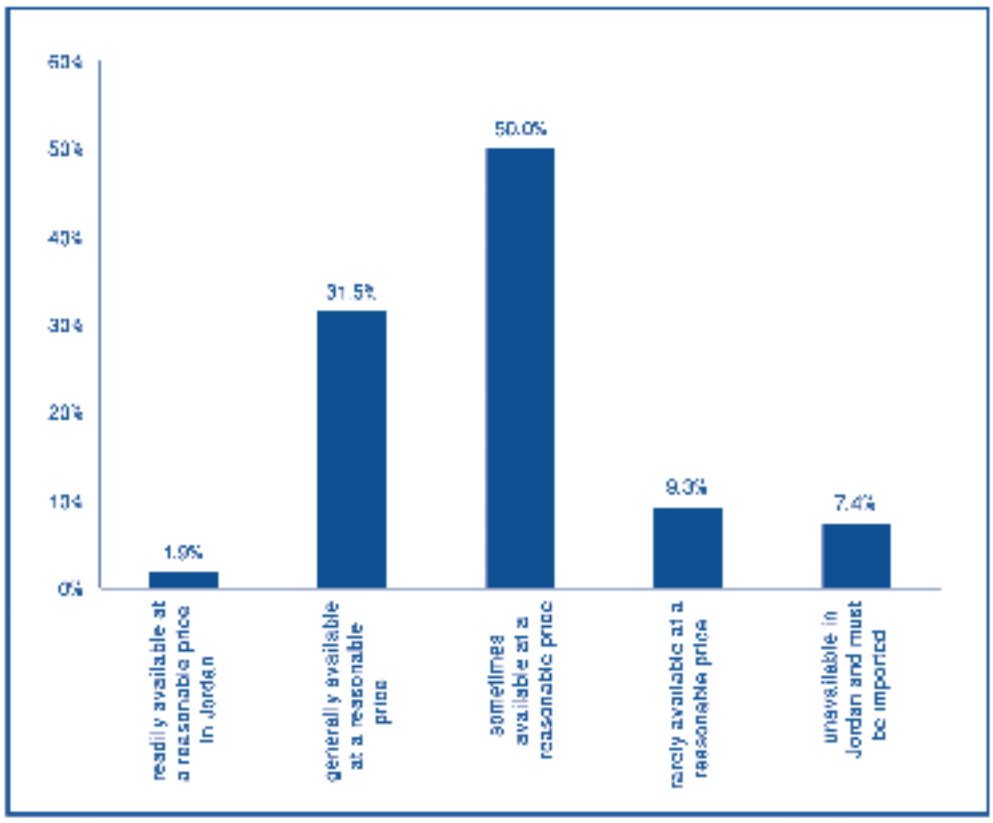
Source: JNCO, ICT Stakeholders' Online Survey, 2007

5.4 Related & Supporting Industries

Data on related and supporting industries to the Jordanian IT sector is fairly limited- however one can surmise that given the industry, there are few backward and forward linkages. In the telecom sector, there are a few firms that are mostly joint ventures with foreign partners that would imply sourcing from abroad. In the IT services industry, the number of firms is still very small with very little collaboration or cooperation. The overall environment for the IT sector in terms of supporting and supplying industries along the value chain is one of quantity rather than quality in most cases. Again, on the basis of the survey results of respondent firms, it is clear that most believe that suppliers to the industry are average in their quality. Specialized inputs needed for

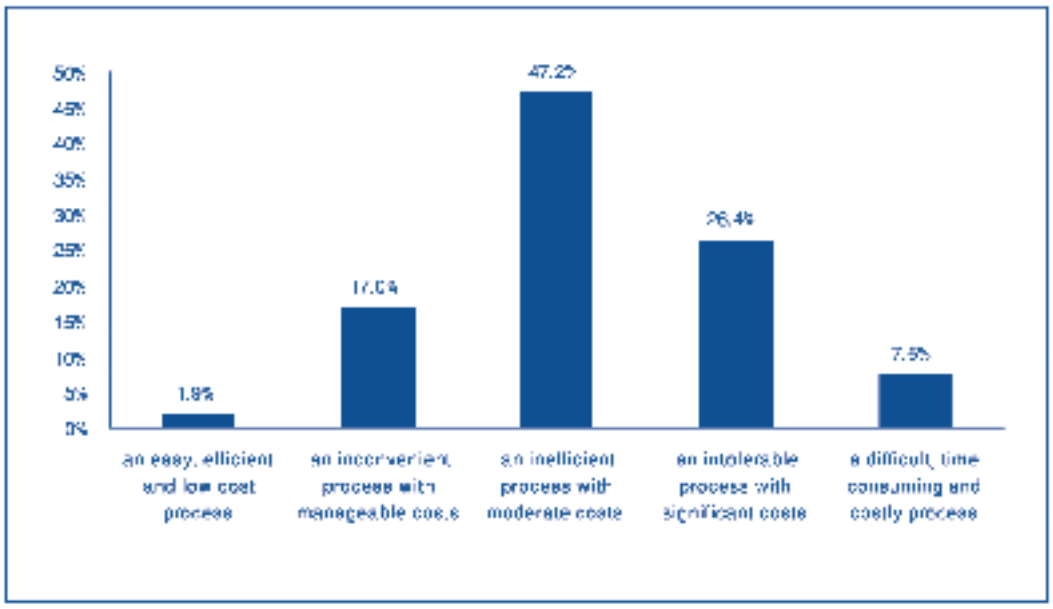
a competitive business are more often than not, available domestically. When importation of these specialized inputs becomes necessary, the majority of firms consider it a difficult and time-consuming process.

Figure 4.40 - Specialized inputs and materials for IT are:



Source: JNCO, ICT Stakeholders' Online Survey, 2007

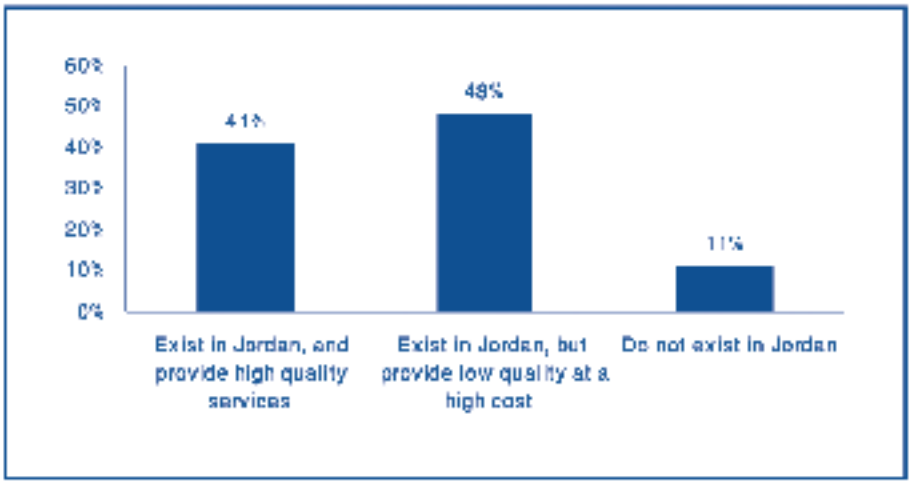
Figure 4.41 - Importing specialized materials for IT is:



Source: JNCO ICT Stakeholders' Online Survey, 2007

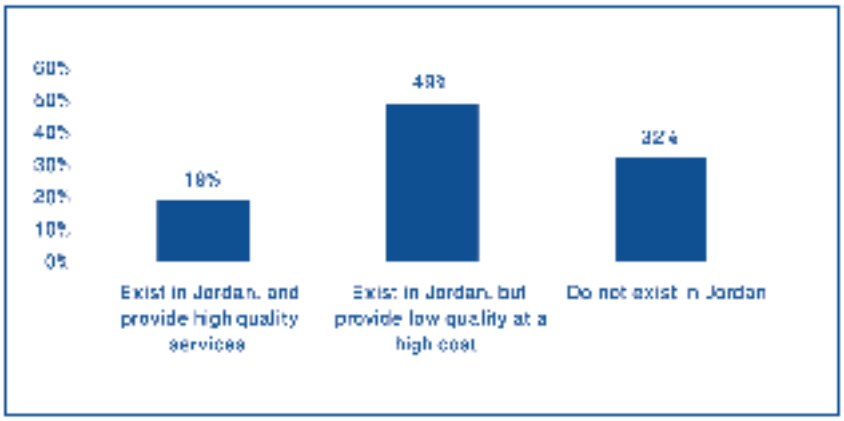
A very important input into the competitiveness of a sector such as the IT sector is one of global signals of quality and benchmarks. Towards this end, having a strong network between global certifications such as the Sigma series, CMM, etc., and the domestic industry is critical. However, such a network is not well established in Jordan. Only a small fraction of firms believe they exist and provide services of any quality.

Figure 4.42 - Organizations that provide specialized, technical supporting services for the IT industry



Source: JNCO, ICT Stakeholders' Online Survey, 2007

Figure 4.43 - Organizations that provide objective, third party standards and certification for the IT industry



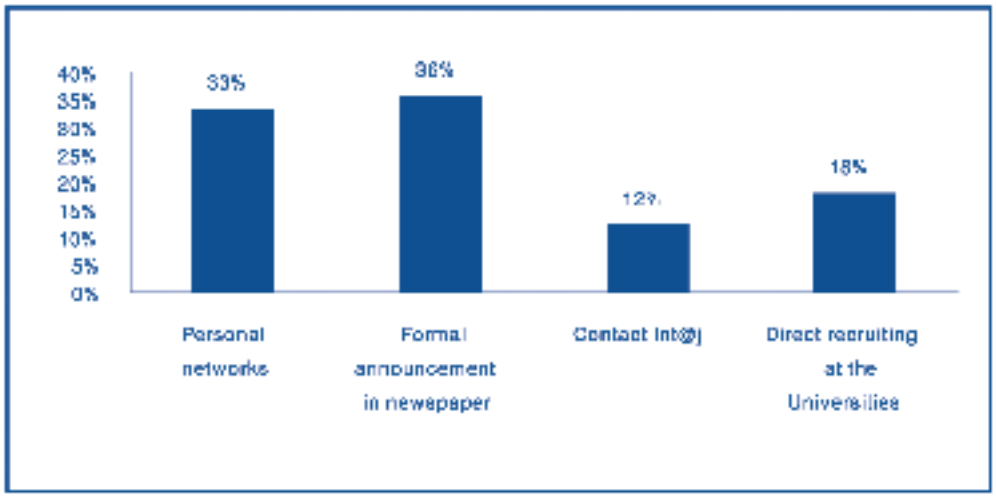
Source: JNCO, ICT Stakeholders' Online Survey, 2007

Business chambers, industry organizations, and other such 'institutes for collaboration' that provide a role of advocacy, marketing, training, and coordinating with other stakeholders on the needs of an industry are crucial for the IT industry.

Jordan's primary industry association in this field is the INT@J, the Information Technology Association of Jordan. Established in 2000, this organization has been instrumental in working with the industry and government in establishing a comprehensive policy framework for the sector: the 'REACH' initiative that is considered the IT blueprint for the country. While the organization has done extremely commendable work in advocating and

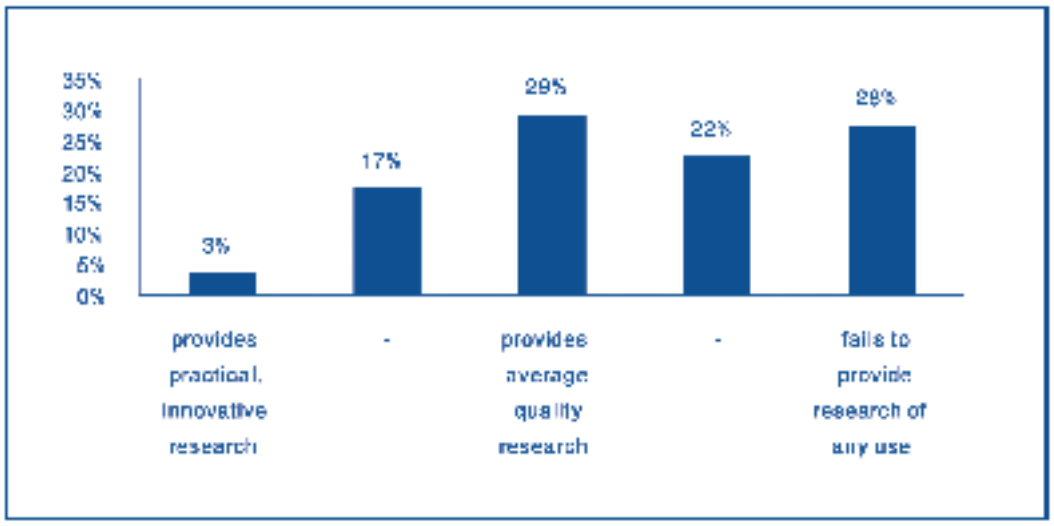
creating an increasingly competitive environment, there are areas in which firms believe that INT@J needs to improve: one being a channel and conduit for recruitment, and another being a hub for innovative research.

Figure 4.44 - Recruiting Channels Most Used by IT Firms



Source: JNCO. ICT Stakeholders' Online Survey, 2007

Figure 4.45 - INTAJ (private sector)

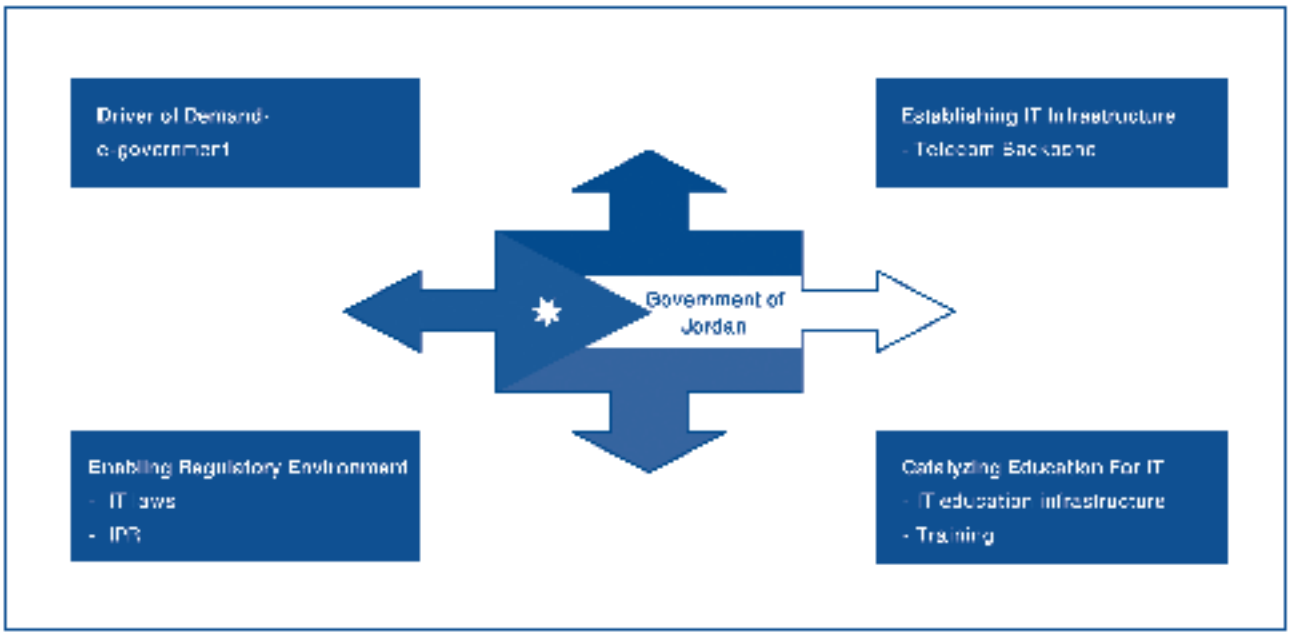


Source: JNCO. ICT Stakeholders' Online Survey, 2007

5.5 Role of Government

Since 1999, the Jordanian government has played a highly proactive role in supporting and strengthening the IT sector in the country in various ways. It has been instrumental in encouraging the private sector to strategize on and envision the sector's development path into the future, and as a driver of economic growth. Figure 4.46 illustrates the numerous ways in which the government has positively intervened in the industry.

Figure 4.46 – Role of Government in Jordan's IT Sector



DRIVER OF DEMAND: As we have discussed earlier, the government launched its e-government initiative, under which it aims to enhance its operational efficiency and become more customer oriented through e-provision of all services. In this process, it has been a source of demand for the country's IT sector. Taking into account its experiences and lessons since the initiative was launched, a formal e-government Strategy 2006-2009 has been formulated to study and apply global best practices in e-initiatives. The government has also taken the education of its employees in IT practices very seriously. In 2004, it initiated a program to educate 20,000 employees. However, even now, only about 4% of its employees are IT savvy.[89]

PROVISION OF INFRASTRUCTURE: The government has been successful in establishing a very sound telecommunications infrastructure, compared to other countries in the region. Jordan Telecom, erstwhile known as TCC, was established as a wholly government-owned organization in 1971, and created the telecom backbone in the country. It was fully privatized and divested in 2004.

CATALYZING IT EDUCATION: Again, the Jordanian government has taken the lead in recognizing the urgent need to align its education system with the requirements of an ever changing IT sector, both domestically and globally. The government's efforts in this area include previously mentioned programs that have been launched in the last few years to connect universities and schools to the Internet, introduce e-curriculum, involve the private sector in training teachers, and provide guidance in practical skill building. Results of these programs need to be tracked closely to ensure that the industry is receiving highly trained employees.

REGULATORY ENVIRONMENT: The government has signaled its desire to create an enabling environment for operators in the IT industry through creating and updating a number of rules, regulations, and acts. Jordan's rank on IT Laws is 66 out of 131 countries. Jordan became a member of the World Intellectual Property Organization (WIPO) in 2004, thus paving the way for harmonizing its IPR rules with global benchmarks. It ranks a modest 42nd on providing IPR in the global IT rankings.

[89] 'The e-readiness assessment of the Hashemite Kingdom of Jordan 2006,' MoICT, Jordan

The following table provides Jordan's ranking on its government's usage of, and readiness in IT. While it performs very well in its commitment and prioritization of IT as a sector, there is still much work to be done in actual implementation and delivery.

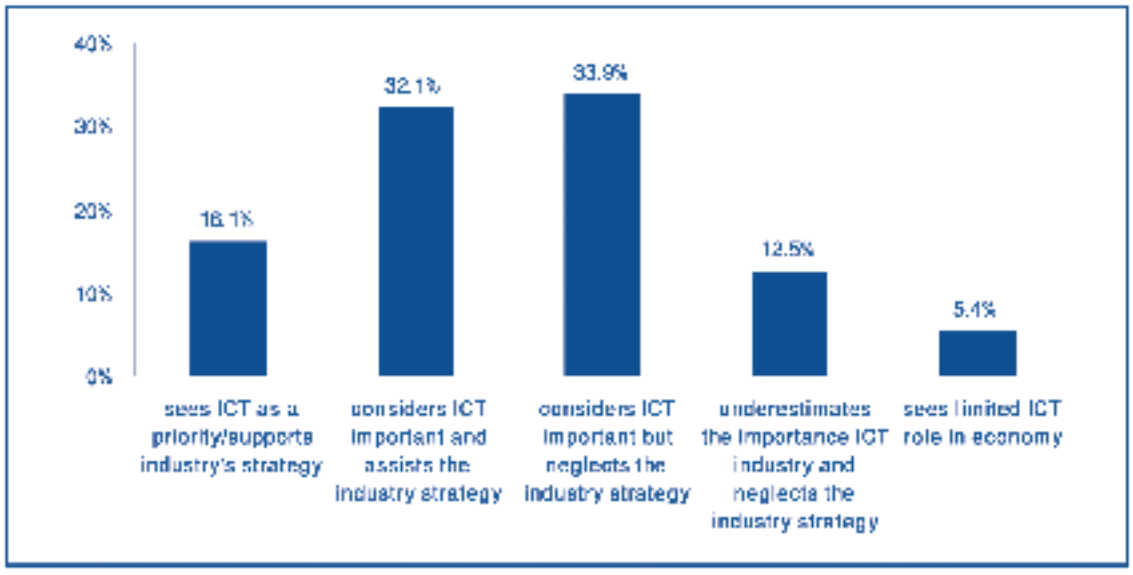
Table 4.4 – Global IT Report 2006-07 Role of Government Rankings

Role of Government	2006-07 Rank
Government Readiness	60
Government Prioritization of IT	27
Importance of IT to government vision of future	25
e-government readiness index	65
e-participation Index	82
Government procurement of advanced technology products	84
Government Usage	61
Government success in IT promotion	91
IT pervasiveness	48
Availability of online services	79
IT use and government efficiency	77

Source: Global Information Technology Report 2006-2007

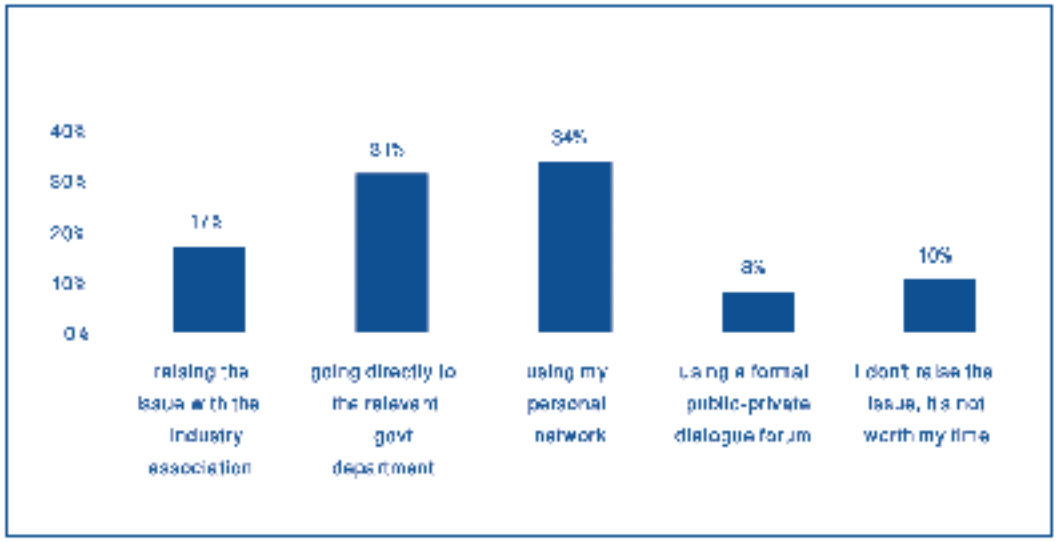
The perception in the industry of government's role in IT sector is more or less favorable as indicated by the survey results included graphically below. Most firms do believe that the government sees IT as a priority and acts accordingly, and most would approach the relevant government departments to resolve their issues.

Figure 4.47 - The Government:



Source: Source: JNCO, ICT Stakeholders' Online Survey, 2007

Figure 4.48 - When my business has an issue that needs to be addressed by the government, I resolve the issue by:

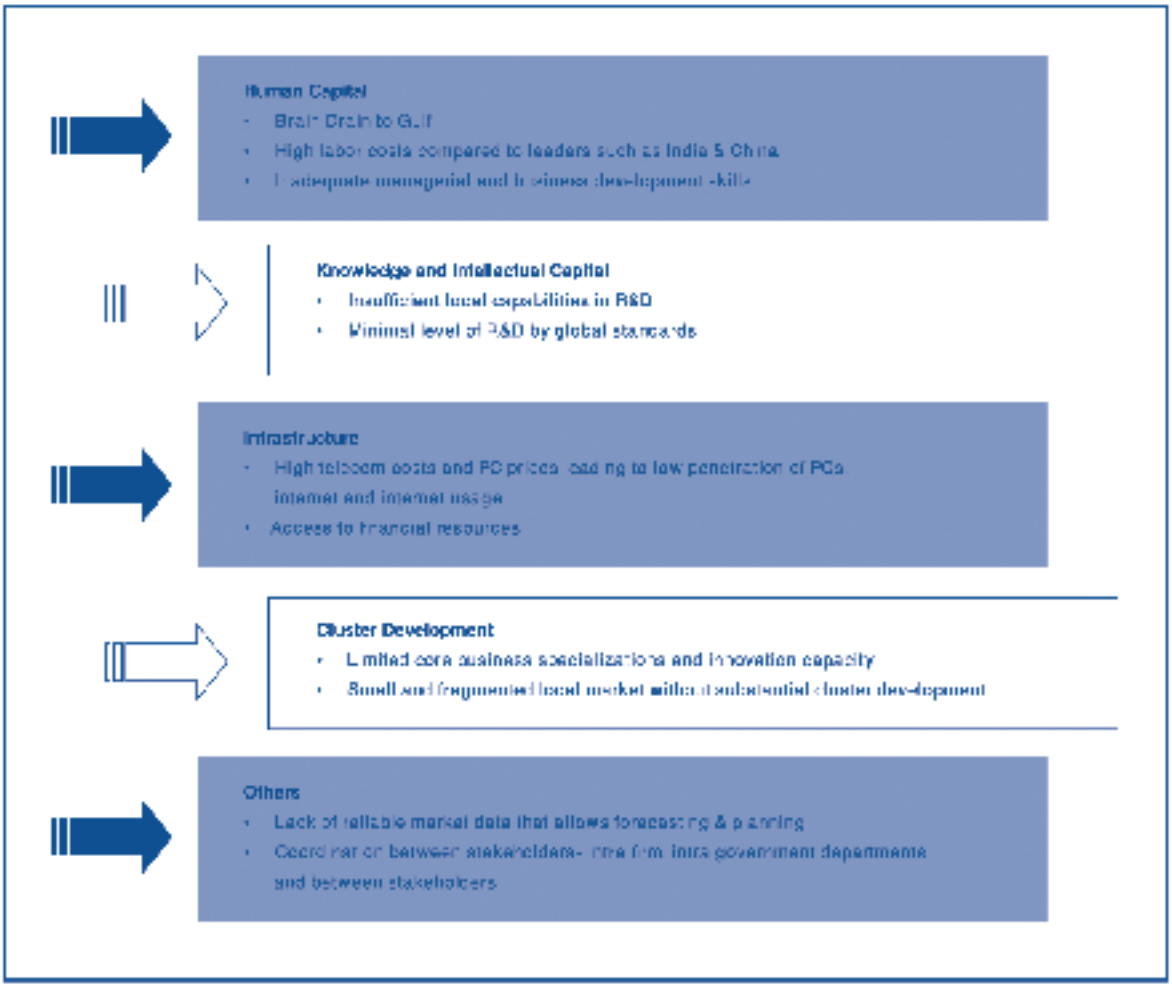


Source: Source: JNCO, ICT Stakeholders' Online Survey, 2007

6. Constraints to Growth

Looking forward, the IT sector certainly has tremendous opportunities for growth in Jordan, the Middle East region, and internationally. However, significant constraints exist that are holding back the sectors growth projectory. From the above analysis, the main constraints to growth include the following:

Figure 4.49 – Constraints to IT Growth



By far, the most pressing challenge is to prepare a large pool of well trained employees that can compete in the region and the world beyond low wages. Along with this, substantial investment in R&D from all stakeholders is required to ensure that the IT sector can compete at the cutting edge of global trends. Making IT tools such as PCs and the Internet available for all to use is important in creating domestic demand and establishing a critical mass for the domestic industry. A concerted approach towards creating linkages upstream and downstream in the industry and across countries can have a cascading effect in enhancing competitiveness. Finally, tools to enable smooth functioning of the industry such as current, reliable and timely market data or greater coordination and collaboration among all stakeholders are also needed.

Tourism

TOURISM[90]

1. HISTORY AND CONTEXT

Tourism is one of the largest contributors to Jordan's GDP and one of its largest foreign currency earners. Although Jordan boasts several world-famous tourist attractions, recognition of tourism as a high-potential sector in Jordan has been relatively recent; the Jordan Tourism Board was only established in 1998. The Board is both publicly (80%) and privately (20%) funded.

KEY FIGURES:

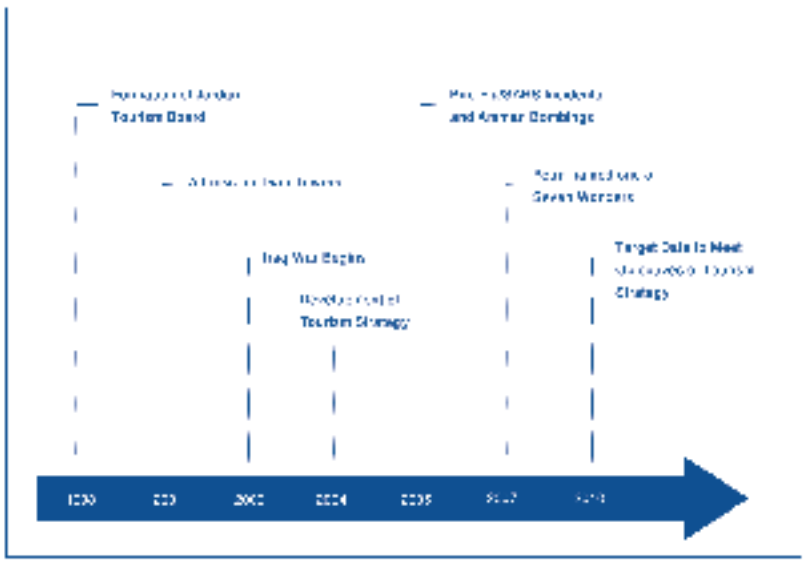
- **Tourism makes up 9.2% of GDP**
- **Tourism receipts of $1.6 billion in 2006**
- **Annual growth of 4.5%**
- **Sector employs 147,000, or 8.7% of total workforce**

The industry suffered from the external shocks of the attacks of September 11, 2001 and the subsequent war in Iraq, beginning in 2003, but it has since recouped lost earning power and is growing at a sustained rate of approximately 4.5% for the last several years. Jordan has to date been highly reliant on regional tourism, which has consistently accounted for upwards of 60% of tourism receipts. Regional tourism consists primarily of leisure trips as well as the niche medical tourist segment. Regional visitors remain the overwhelming majority despite efforts to attract "high-value" tourists from the U.S. and Europe by promoting cultural and historical tourism.

Jordan's National Tourism Strategy 2004-2010 aims to double the size of 2004 tourism receipts by 2010 to $1.8 billion and to add 50,000 jobs to the economy. Jordan intends to accomplish this via a) intensified marketing and promotion, b) an integrated approach to human resource and product development, c) institutional and regulatory reform, and d) the support of product development and competitiveness.

A timeline of key developments in the Jordan tourism industry is presented in Figure 5.1 below.

Figure 6.1 - Timeline for the Jordan Tourism Industry

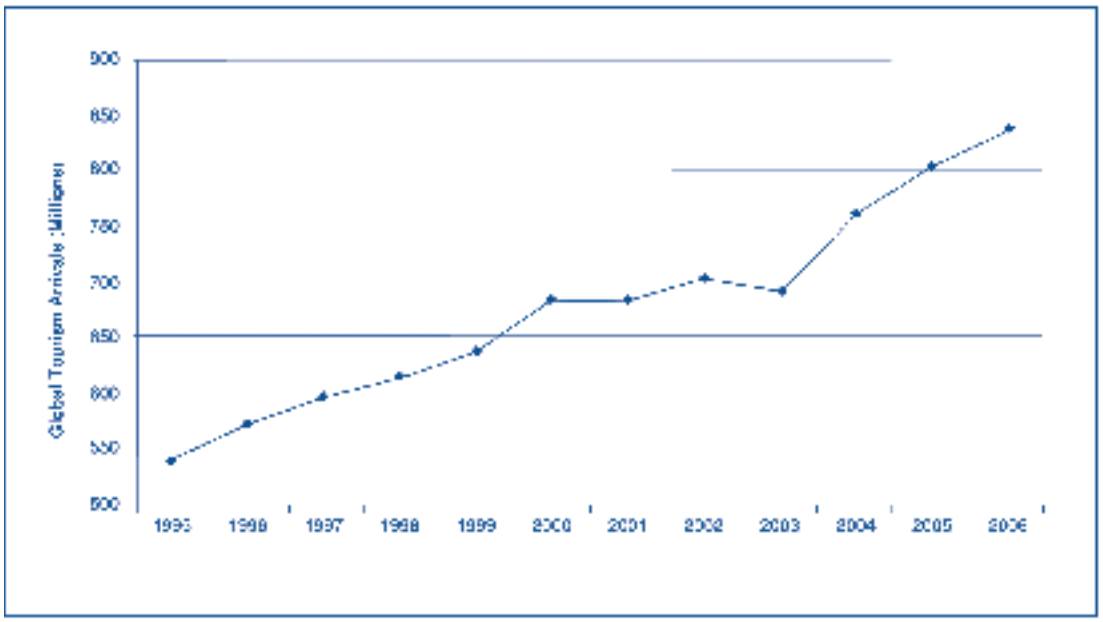


[90] Selected results of a survey conducted by the Jordan National Competitiveness Team (JNCT) in September, 2007 have been incorporated throughout this analysis where appropriate.

2. Regional and International Market Trends

The global hospitality industry accounts for upwards of 35% of the world's exports in services (this is even higher in least developed countries, where it represents about 70% of service exports). As illustrated in Figure 5.2 below, world international tourist arrivals have grown about 4.6% annually over the last 10 years and have increased steadily since 2004 after several years of flat growth from 2000 to 2003.

Figure 5.2 - International Arrivals, 1995-2006



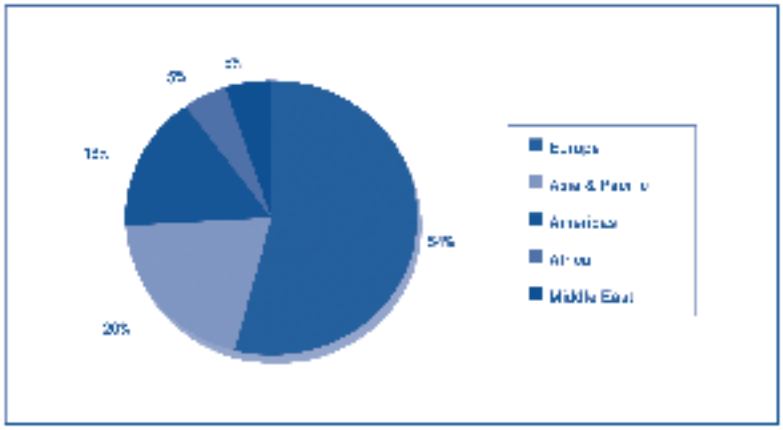
Source: UNWTO

Interestingly, this growth has taken place in spite of rising plane fares, the war in Iraq, and health crises in Asia ranging from H5N1 Avian Influenza (Bird Flu) to SARS, suggesting that the industry is relatively resilient. In 2006, tourist arrivals grew 4.5% from the previous year to 842 million tourists[9] worldwide, over half of whom (54.4%) were destined for Europe.[92]

The industry in the Middle East actually contracted by 1.4%[93] from 2005 to 2006, its second consecutive year of negative growth. However, one should be careful not to draw too many conclusions from this, as the base years (2003 and 2004) to which these numbers are being compared are skewed by the large number of Western military and aid workers passing through Amman en route to Iraq. Although arrivals in the Middle East doubled between 1995 and 2005[94] , and although the annual increase in tourist arrivals between 2000 and 2004 was 9.5%, the fastest growth of any region,[95] the Middle East still only accounts for about 5% of all tourist arrivals. It should be noted, however, that significant investment in tourism-related infrastructure has accompanied the tourist boom; much of this has been facilitated by sustained high oil prices.[96] Assuming that oil prices remain high, sustained investment should continue to drive growth, albeit from a relatively low base.

[91] World Tourism Organization (UNWTO) 2005.
[92] UNWTO.
[93] UNWTO.
[94] Travel and Tourism Competitiveness Report, 2007.
[95] UNWTO
[96] UNWTO

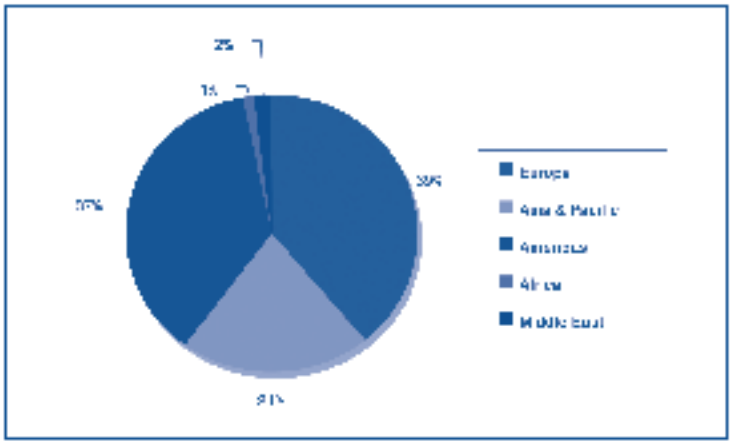
Figure 5.3 - Main Regions Volume Market Share, 2006



Source: UNWTO

While North and South America represent only a 16% share of tourism market, their personal travel and tourism expenditures are nearly as high as Europe's. The chart below shows personal expenditures by region (that is, the regions that are spending the most on worldwide tourism).

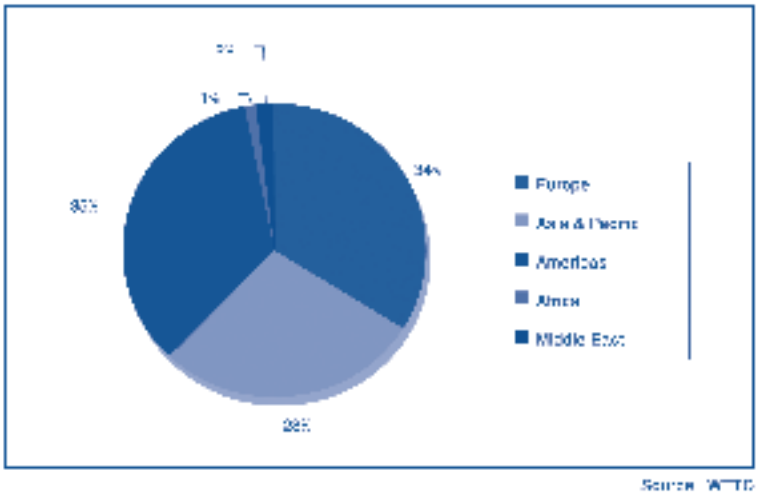
Figure 5.4 Personal Travel and Tourism Expenditure by Region, 2006



Source: WTTC

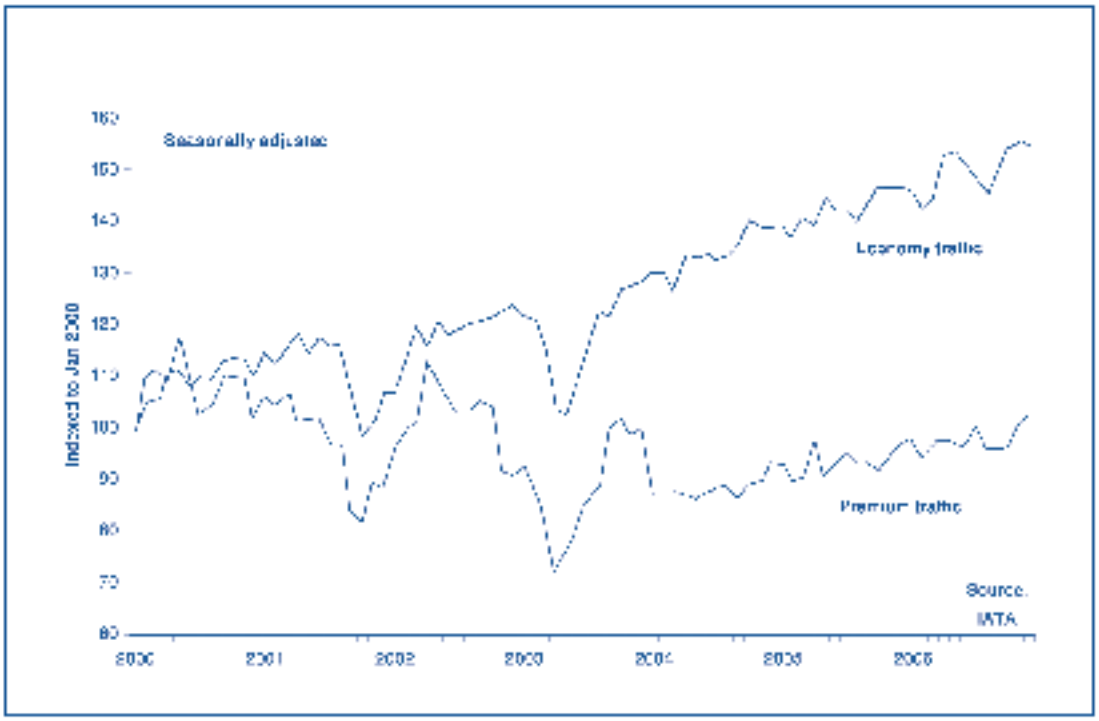
Looking forward, however, by 2017 the World Travel and Tourism Council projects a shift in market share, primarily from Europe to Asia and the Pacific, as reflected in Figure 5.5. The increase in disposable incomes in Asia, especially China and India, is strong evidence to support this estimation.

Figure 5.5 - Personal Travel and Tourism Expenditure by Region (2017 projected)



Another key trend in the world tourism industry is an increase in the importance of low-cost carriers, reflected in a marked shift in the number of passengers flying economy class as compared with those flying premium (i.e. business and first) classes. This trend has been especially prominent since 2000 (see Figure 5.6 below).

Figure 5.6 - Relative Growth of Economy and Premium Air Traffic



Source: International Air Transport Association

OTHER KEY INDUSTRY TRENDS INCLUDE:

1. Increased frequency of travel due to greater amounts of leisure time, cheaper air travel, and higher disposable incomes,
2. Increased desire for specialized tourism products as consumers start to demand higher standards of service and destinations that offer more of an experience rather than a vacation,
3. Increased use of tailor-made and small group travel compared to mass tourism packages,
4. Tourism enterprises and destinations focusing more on customer satisfaction and service quality, and
5. Increased demand for MICE (meetings, incentives, conferences, exhibitions) travel, which is one of the fastest growing industry segments.[97]

These trends suggest that Jordan will be unable to rely solely on its natural advantages (particularly those in cultural tourism). While Petra will undoubtedly continue to be a major draw given its recent inclusion as one of the New Seven Wonders of the World in an online poll,[98] Jordan will have to upgrade the overall quality of its offer in order to reap the full benefits of Petra's new prominence and increase the time tourists are staying in Jordan, as well as their daily expenditure.

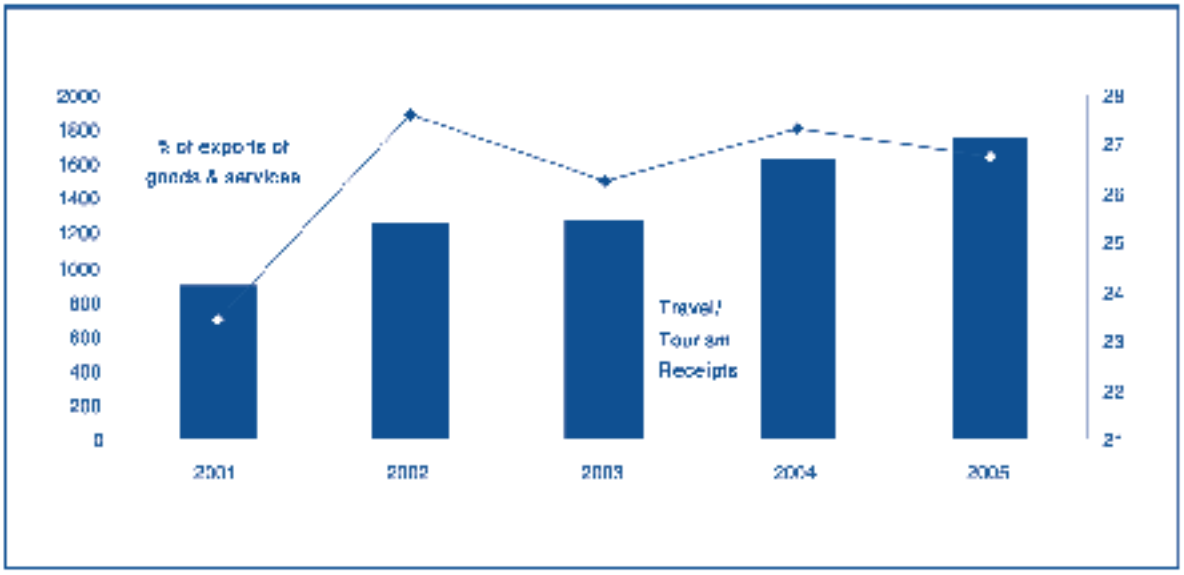
3. RECENT PERFORMANCE OF JORDAN'S INDUSTRY

From 2002 to 2006, the number of arrivals in Jordan increased by just over 40%, while receipts increased by 56.6% (from JD 743.2 million in 2002 to JD 1.2 billion in 2006),[99] suggesting an increase in receipt per tourist. Interestingly, during the same period, the number of tourists staying overnight stayed relatively flat (hovering at just over 50%), even falling slightly from 2005 to 2006 (to about 49%).

This data can be interpreted in two different ways. It may indicate that travelers are, on average, spending more on a daily basis or it may suggest that travelers are extending their stays for a longer periods of time. Package tours decreased from 2005 to 2006 (from 338,787 to 277,913) [00] at the same time, the percentage of overnight stays decreased, it is probable that each tourist is spending more per day. Like Jordan's other tourism statistics, it may be skewed by a high number of international contractors passing through Amman en route to Baghdad. This would seem to be supported by the fact that the increase in tourism receipts becomes appreciably higher beginning in 2004 (see Figure 5.7). [0]

97 www.traveldailynews.com, Oct. 26, 2006
98 NewOpenWorld Foundation, http://www.new7wonders.com/, 2007.
99 Ministry of Tourism.
100 Indicators
101 Indicators.

Figure 5.7 - Tourism Receipts (USD mn), % of Exports of Goods & Services

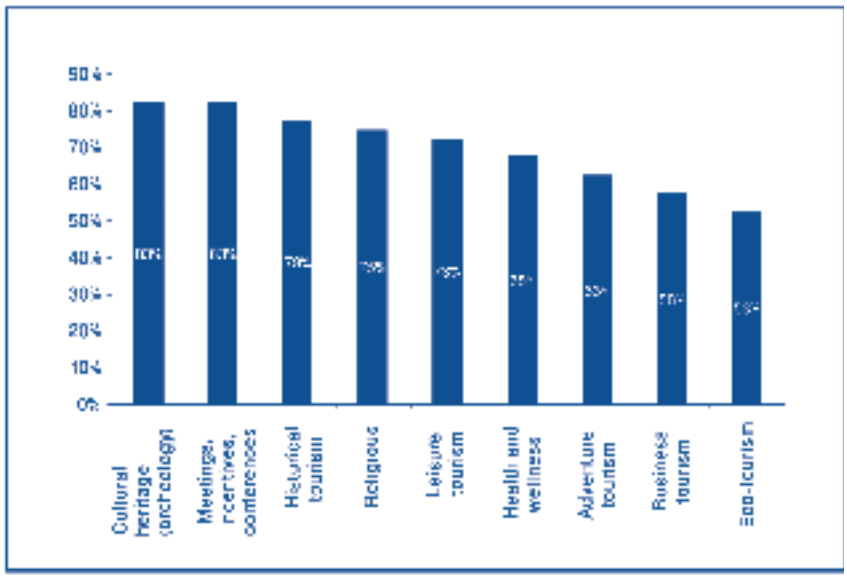


Source : Ministry of Tourism and Antiquities

2003 was the only year in which tourism receipts did not increase considerably over the prior year; this can be attributed to the negative impact of the Iraq war.

Accompanying the rise in foreign tourists, there was a slow but steady increase from 2002 to 2006 in the number of hotel rooms (11.4%) and international tourism receipts per arrival for overnights (15.7%). [02] Direct employment, however, jumped dramatically (nearly 50%) during the same period of time, from 21,293 in 2002 to 31,064 in 2006 . [03]

Figure 5.8 Please indicate the particular tourism segments that currently being served in Jordan



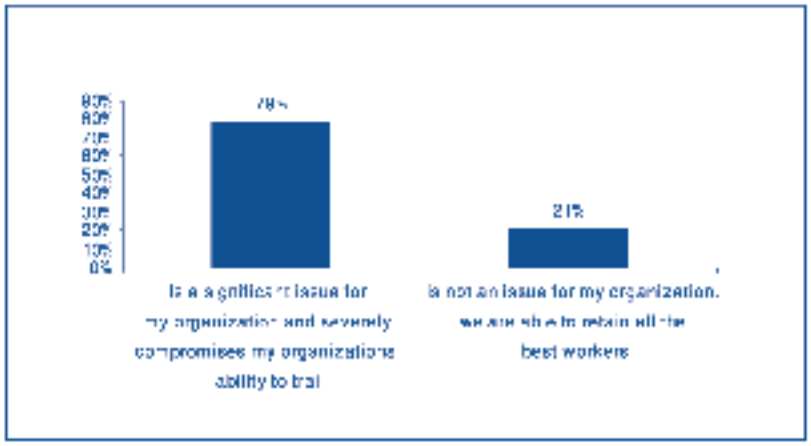
Source : JNCO, Tourism Stakeholders' Online Survey, 2007

The tourism industry in Jordan is increasingly aware of the various specialized product segments that are growing internationally and which offer Jordan opportuinties to diversify away from the traditional cultural, religious, and historical tourism segments.

When asked to indicate the particular tourism segments that are actively developed in Jordan, over 50% of respondents to the JNCT survey chose all nine options.

[102] Indicators
[103] Ministry of Tourism.

Figure 5.9 Qualified workforce emigration, the migration of skilled and experienced technical professionals

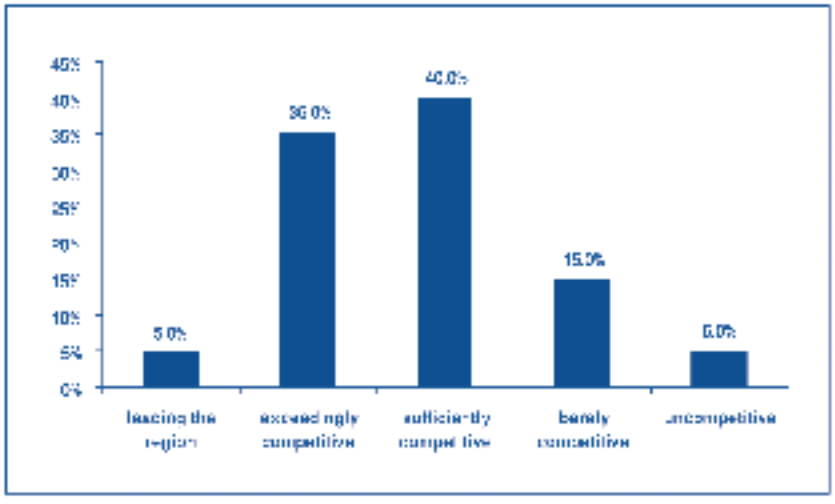


Source: JNCO, Tourism Stakeholders Online Survey 2007

Total employment in the travel and tourism industry in Jordan is estimated at 147,000, or 8.7% of total employment, ranking Jordan below only Bahrain, Tunisia, and Morocco in the region. Tourism is one of the core occupations of Jordan's economy. However, as is illustrated in Figure 5.9 and is discussed in more detail below, Jordan is a training ground for other countries. Brain drain, or the emigration of skilled, experienced professionals, is a critical issue for the tourism industry and its ability to offer world-class services.

There are some encouraging signs of investment into the sector. New projects included a national museum, funded in part by JICA (the Japanese International Cooperation Agency) and a number of hotels, such as Catholic Student Bay (USD $500 million), the Ayla Oasis project (USD $750 million), the Saraya Aqaba project (USD $362 million), the Sun Days Water Park (USD $60 million), the Aqaba Ishkar Kempinski Hotel (USD $60 million), the Royal Metropolis-Jordan Gate and Royal Villages of Amman (USD $1 billion), the Dead Sea Holiday Inn Hotel (USD $21 million), and the Crowne Plaza Hotel at the Dead Sea (USD $49 million). In addition, development of the Eastern Bank of the Dead Sea attracted about USD $605 million in 2004 specifically for tourism. [04] In the JNCT survey, 95% of respondents believed that foreign investment from elsewhere in the region was steady or increasing, but 76% indicated that investment from outside the region was flat to non existent.

Figure 5.10 - When compared with competing industries in the middle east region, the Tourism industry in Jordan is



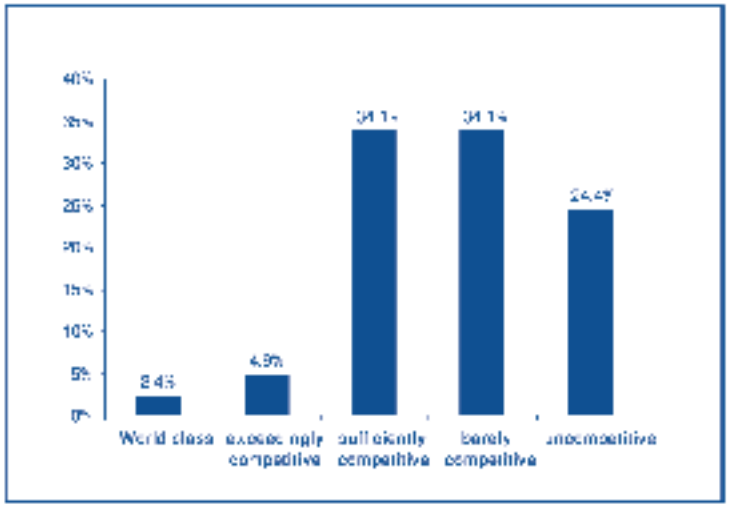
Source: JNCO, Tourism Stakeholders Online Survey, 2007

[104] www.medibtikar.eu, February 15, 2007

4. Regional and International Benchmarking

In order for the Jordanian tourism industry to remain competitive, it must understand where it stands in comparison to international competitors on relevant benchmark indicators. Comparisons to Turkey, Egypt, and the United Arab Emirates provide a sense of what regional competitors are doing. Comparisons to Italy, France, and Malaysia offer some useful insight on international "best practices" in the tourism industry, specifically as they relate to country positioning. Turkey and Egypt were selected because they have a similar offer based primarily on historical/cultural tourism. The UAE was included because it offers a contrasting model that is worth keeping on Jordan's "radar." Countries outside of the region were identified because they offer contrasting successful models in diverse geographical areas. For the most part, benchmarking has been presented below not by country but by topic. The nature of tourism as a global industry, with consistent metrics that can be compared across countries, allows for this level of analysis. In addition to benchmarking Jordan against these countries using industry indicators of performance, the industry was asked in a survey how they compared to these countries.

Figure 5.11 - When compared with competing industries in the world, the Tourism industry in Jordan is:



Compared to the region, Jordanian tourism firms appear to have a modest perception, ranking themselves as neither leading the region nor uncompetitive. However, relative to international competitors, the majority of Jordanians believe that they are still below average or uncompetitive. When asked to compare Jordan to each benchmarked country, 78% of respondents indicated Egypt has a competitive advantage over Jordan, 75% indicated Turkey is more competitive, and 68% indicated that UAE is more competitive. Among countries outside of the region, the results were starker: Malaysia (85%), Italy (78%), and France (80%).

Egypt captured around 21% of the region's market share of tourist arrivals, with the UAE around 14%. Jordan, by comparison, attracts about 16% of the region's tourists. [05] Considering that these two countries are two of the regional leaders (Egypt on cost and in cultural tourism, and the UAE on both cost and overall tourist ranking), Jordan's performance in attracting regional visitors has been strong, but, as mentioned earlier, may be largely a result of Westerners in transit to Iraq.

Among regional benchmarks, Turkey had the highest number of tourist arrivals among the three benchmarked countries during the period 2001-2006. Turkey also enjoyed, by a slight margin, the highest growth rate in the number of tourist arrivals, estimated at 16% over the same period, followed by the UAE at 15% and Egypt at 14%. [06] Revenue generated by the tourism industry was also the highest in Turkey, reaching around USD $13 billion in

[105] UNWTO
[106] UNWTO.

2005 (latest available), followed by Egypt at nearly USD $7 billion, and UAE at USD $2 billion. Jordan's revenue stands at USD $1.6 billion. Italy, by comparison, generated USD $35 billion; France and Malaysia, USD $11 billioin and USD $8.5 billion, respectively.

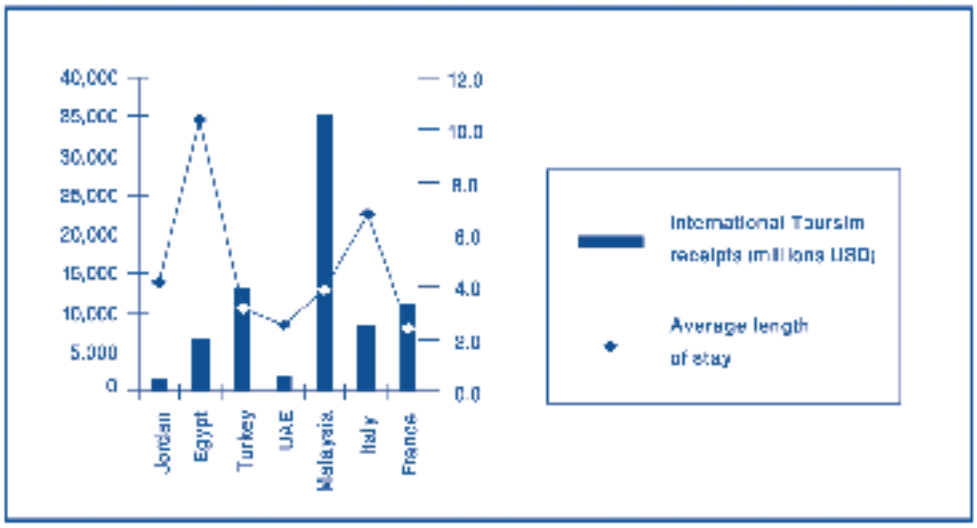
More important than the absolute figures, however, is the percentage of GDP for which these numbers account. In Jordan's case, travel and tourism account for approximately 9.2% of the country's GDP. This is the highest in the benchmark group, compared with Egypt (7.9%), Turkey (5.7%), and the UAE (just 1.1%). In terms of employment, Jordan's travel and tourism sector is responsible for 8.7% of the country's jobs, also higher than the benchmark group. Tourism accounts for 6.7% of Egypt's employment, 3.3% in Turkey, and 1.6% in the UAE. [07] This suggests that, while Jordan's absolute tourist receipts are lower, its importance as a driver of Jordan's economy is more significant, making improved performance in this sector relatively more important for Jordan than, for example, the UAE. It may also suggest that Jordan should consider doing more to diversify its income to reduce its reliance on tourism.

Tourism is a significant generator of foreign currency, particularly in Turkey and Egypt as tourism expenditures comprised 70% and 49% of total export services respectively. However, it is interesting to note that, according to the World Tourism Organization, while tourism revenues make up an increasing share of Egypt's GDP, up from 4.2% in 2001 to 7.9% in 2006, Turkey's tourism revenues actually represent a decreasing share of its GDP, falling gradually over the same period of time from 6.5% to 5.7%. While this may suggest that Egypt is increasingly able to leverage its tourism sector as an economic driver, it may also suggest that Turkey has been more successful in diversifying its economic activity.

In 2005, Egypt enjoyed the highest average length of stay at 10.4 days, trailed by Turkey (3.2d) and UAE (2.5d). Jordan's average stay was 4.2 days. Egypt's extended length of stay could be attributed to Egypt's diversified cultural heritage and vast number of sites over a large geographic area that offer tourists an exotic and unique experience, including seven World Heritage Sites, and therefore a visit to Egypt requires an extended stay. This has been reinforced by the message that Egypt has marketed, such that tourists assume a visit to Egypt will require a longer period of time. The country's size plays a role as well, requiring longer transit times between sites. Average length of stay has been increasing in Egypt in part because of aggressive promotions in resort packages (although this has had the negative side effect of driving down hotel room revenues). The graph below illutrates average length of stay relative to annual tourism receipts for each benchmark country. Among non-regional benchmarks, the average stay in France is 2.4 days, Italy 3.9 days, and Malaysia 6.8 days. The difference in largely attributable to their relative locations-many visitors to Switzerland and Italy come from elsewhere in Europe, enabling them to spend short periods of time. Malaysia's average stay is of similar duration for local visitors, but pulled up by international tourists who are traveling long distances and therefore more inclined to stay for an extended period of time.

[107] TTCR 2007.

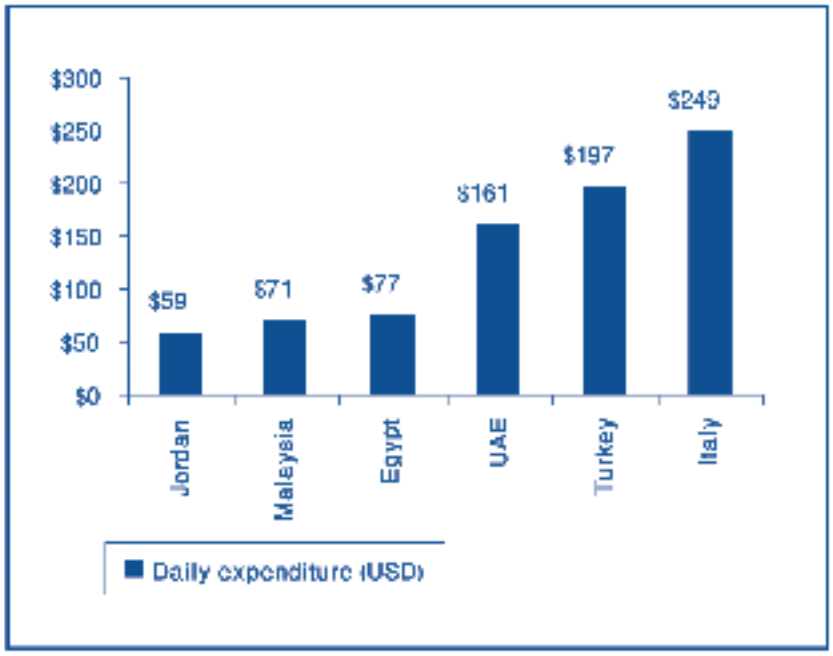
Figure 5.12 – International Tourism Receipts and Average Length of Stay



Source : World Trade Organization

While estimates on spending suffer from a lack of reliable data, international tourism receipts per arrival are lowest in Jordan (ranging from USD $250-$300 per visit) and the UAE (USD $250-$300), followed by Egypt (about USD $800) and Turkey (estimates range from USD $650- $945). When viewed in conjunction with the data regarding average length of stay, visitors are spending much more in Turkey what they are spending in the UAE and Jordan, although the length of stay is similar. Furthermore, they are spending approximately as much in Turkey for a three-day stay as they are in Egypt for a ten-day stay. Another way to look at spending patterns is to look at average spent per day. Jordan is reaping the fewest benefits on this measure, followed closely by Egypt and Malaysia, each of which is significantly lower than Turkey and Italy. Daily spend rates for each benchmark country are illustrated in Figure 5.13 below. Hard data can found in the table at the end of this section.

Figure 5.13 - Average tourist daily expenditure (USD)



Source: Calculations are estimates based on a combination of local and international sources.

Hotel room occupancy rate was the highest in UAE at almost 86% in 2006, up from 61% in 2001. This is an increase of 41%, far exceeding that in Turkey (12%) and Egypt (5%). This is partly reflective of the year-round nature of the UAE's industry, although it is also partly a function of the fact that the UAE has been adding hotels at a slower pace than the other two countries (the number of hotels in Egypt, for example, increased by 28% over the same period of time, while growth in the UAE was only 10%). Absolute occupancy rates in Egypt and Turkey are 64% and 52%, respectively, with Jordan at 48%. These numbers actually compare favorably with Malaysia (63%), France (50%) and Italy (just 33%).

The UAE scored consistently best on most measures of the Travel and Tourism Competitiveness Index, resulting in a ranking of 18th overall, compared with Turkey (52nd) and Egypt (58th). Jordan scored 46th overall. It is interesting to note that the UAE, with far fewer "endowed" factors (ranking just 80th on "natural and cultural resources") performs much better than the other benchmark countries, all of which have much more to offer in this regard.

This data may suggest that something akin to the "natural resource curse" afflicts countries endowed with other natural advantages in tourism, discouraging upgrading, while those countries like the UAE without those advantages are forced to innovate in order to compete. This hypothesis would seem to be supported by UAE's rankings; its competitive ranking in regulatory framework was driven primarily by its scores in safety and security (10th); its ranking in business environment and infrastructure (19th) primarily by its air transport infrastructure (8th) and price competitiveness (also 8th), and its score in human, cultural, and natural resources (24th overall) primarily by its national tourism perception (3rd) as well as its availability of qualified labor (19th).

While the analysis above is focused primarily (although not entirely) on regional competitors, insight can also be gathered by looking at some of the world's leading performers outside of the region. For instance, Italy and

France do not attempt to compete on price, ranking just 116th and 118th in the world, respectively. However, both have been able to parlay their substantial cultural and natural resources into a successful product, in combination with a top ranking on such things as access to sanitation and drinking water, primary education enrollment, malaria incidence, and risk of malaria and yellow fever, as well as top-notch infrastructure (both ground and air transport), on which both rank in the top 5.

Malaysia, on the other hand, has combined a low-cost position (2nd overall) with tremendous success in marketing. Malaysia's "Malaysia Truly Asia" campaign has been a driving force behind its high scores on fair attendance (2nd), effectiveness of marketing and branding (6th), and government prioritization of the T&T industry (8th overall). Like the UAE, Malaysia has been able to overcome a dearth of natural and cultural resources (101st overall) to achieve a relatively high score (31st overall, just ahead of Italy at 33rd).

While these countries have pursued different strategies, the constant is that each has carved out a very clear competitive position for itself. Both France and Italy have been able to overcome high-cost positions through the quality of their offer, and Malaysia has overcome a lack of cultural endowments to tell a compelling story through marketing and branding. None have relied entirely on inherited factors; all have created a position.

Relevant data for Jordan and each of the benchmark countries can be found in Table 5.1 below. It should be noted that the data was collected from multiple sources, and that some data (spend per day, for example) is a function of other data in the table. Therefore, these numbers should be viewed as estimates that tell a story rather than precise data.

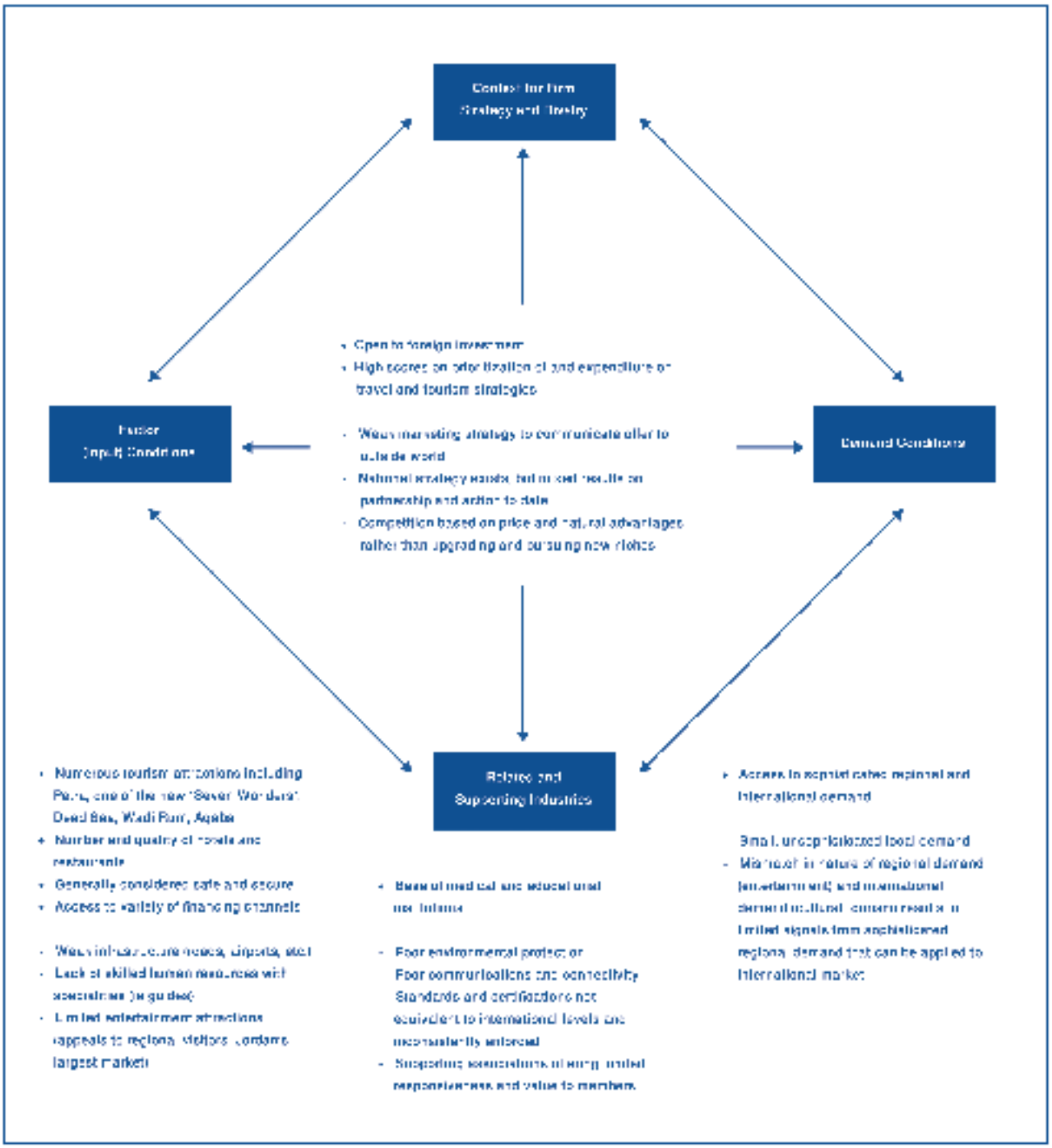
Table 5.1 – International Benchmark Data

Measure	Jordan	Egypt	Turkey	UAE	Italy	Malaysia	France
International Tourism receipts (millions USD)	1,841	6,851	18,152	[illegible]	35,398	8,543	11,340
International tourism, number of arrivals	5,673,035	8,000,000	21,124,886	6,794,465	80,518,550	17,550,000	[illegible]
Average length of stay	4.2	10.4	3.2	2.8	3.5	6.8	2.4
Employment in Tourism	147,000	1,810,000	796,000	40,000	1,051,000	469,000	854,000
Hotel Room Occupancy Rate	48%	64%	52%	55%	34%	32%	n/a
International tourism Receipts per Arrival	$350	$600	[illegible]	[illegible]	$600	[illegible]	[illegible]
Number of hotels	476	1,240		290	33,527	2,333	4,970
Number of tourism and travel agencies	444	1,461	2,119	249	6,750	2,575	N/A
Spend per day (USD)	$83	$77	$127	$151	$249	$7	$536

5. State of Competitiveness

Figure 5.14 (the Porter Diamond) summarizes Jordan's competitive position in tourism.

Figure 5.14 – Porter Diamond for the Tourism Sector



5.1 Demand Conditions

International Demand

Europe accounted for just over 60% of visitors to Jordan from outside the Middle East region, but also showed the slowest growth rate from 2004 to 2005. Those regions showing the fastest growth (notably Africa, followed by the Americas) are those that are growing from the smallest base.

Estimates of the percentage of international tourists that come to Jordan for cultural tourism vary widely, but there appears to be general consensus that it is very significant (upwards of 50%). This represents a challenge for the country in growing its tourism industry, as Jordan ranks just 86th out of 124 countries in the Travel & Tourism Competitiveness Index on "natural and cultural resources". This ranking comes with a caveat, which is that scores are based on the number of UNESCO-designated World Heritage Sites in a given country (Jordan has three-Um Alrassas, Petra, and Qussier Amra). This inherently treats all sites equally, which undervalues Petra. In addition, Jordan offers a number of other attractions (although less well known) including Jerash, the Crusader Castles, and the Dead Sea. However, Jordan (as mentioned in other sections of this report) has thus far been unsuccessful in capitalizing on the relative wealth of sites to encourage tourists to extend their stays.

Table 5.2 - Distribution of Package Tours by Place of Stay for the Period , Jan. – Dec., 2006

No. of Tourists	No. of Tourist Nights	Average Length of Stay	% Share of Nights	Place Of Stay
234,084	582,384	2.5	50.2%	Amman
148,037	268,037	1.8	23.1%	Petra
83,521	133,807	2.1	11.5%	Aqaba
39,331	101,193	2.6	8.7%	Dead Sea
25,300	34,535	1.3	3.0%	Wadi Rum
3,019	4,470	1.5	0.4%	Madaba
2,570	2,973	1.1	0.2%	Karak
1,515	2,287	1.2	0.2%	Tafeileh
1,259	1,917	1.5	0.2%	Ma'an Spa
1,203	1,397	1.2	0.1%	Jerash
245	3,529	14.4	0.3%	Irbid
293	318	1.1	0.0%	Mount Nebou
235	268	1.0	0.0%	Azraq
222	387	1.7	0.0%	Ajlun
33	116	3.5	0.0%	Fuheis
51	160	3.1	0.0%	Umm Qies
67	77	1.1	0.0%	AL- Shobak
2,740	28,309	10.2	2.4%	Others

Source: Ministry of Tourism and Antiquities

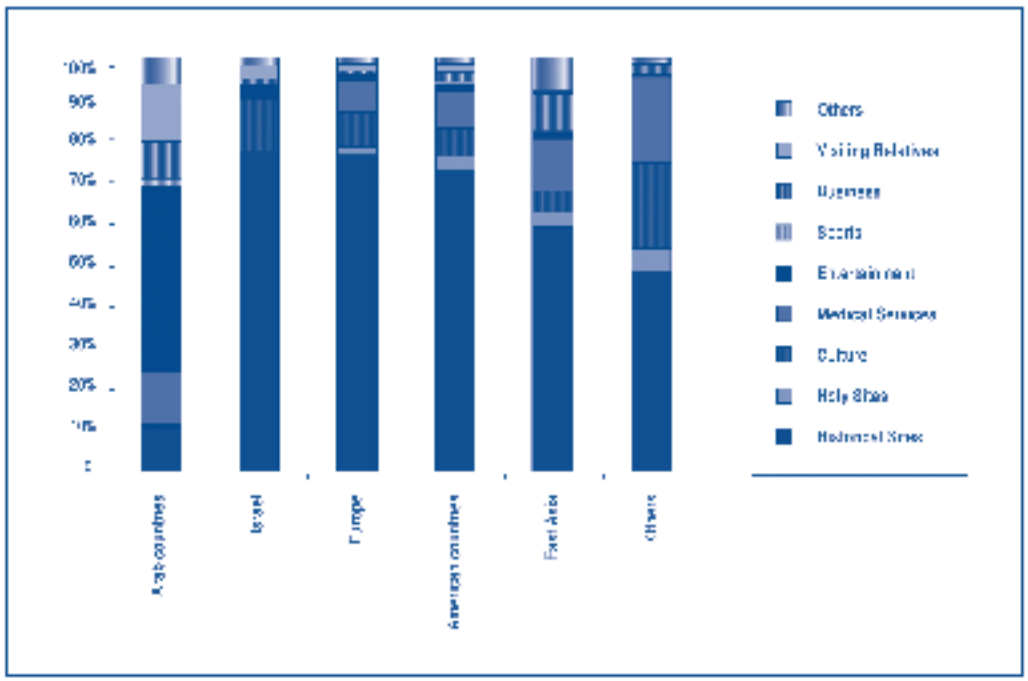
There does appear to be growing demand for package holidays in the Dead Sea, and the cruise market, which grew by 21% in 2004, represents another expanding market. [08] Aqaba handled 51 cruise ships by June of 2007, up from 36 at the same time the year before. [09] Jordanians identified additional potential niches in their Tourism Strategy 2004-2010, including: religious; adventure travel; eco-tourism; meetings, incentives, conferences, and events (MICE); and scientific, academic, volunteer, and educational (SAVE).

[108] "Travel and Tourism in Jordan", Euromonitor Report, January 2007.
[109] "Award winning Petra boosts Jordan's growing tourism industry", ameinfo.com, September 5, 2007.

Regional Demand

Regional demand has been the primary driver of Jordan's tourism industry. However, what appears to drive regional demand differs dramatically from the driver of international demand (cultural tourism), as illustrated in Figure 5.15 below.

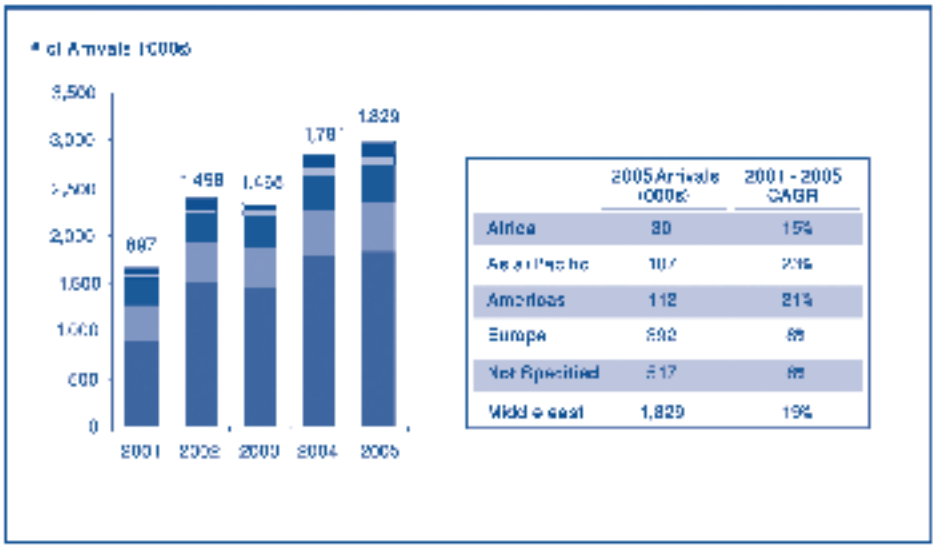
Figure 5.15 - Niches Attractive to Jordan Tourists, by Region



Source: Jordanian National Competitiveness Team/Ministry of Planning

This has significant implications. Figure 5.16 below shows the breakdown of overnight visitors to Jordan by region from 2001-2005. Once visitors whose region is "Not specified" are removed, we can observe that nearly 75% of all tourists come from the Middle East. Moreover, the percentage has remained virtually unchanged since 2002, indicating that Jordan, despite efforts to attract visitors from other parts of the world, remains heavily reliant on this region. However, there appears to be a disconnect between what Jordan is marketing (cultural tourism) and the market on which it is most dependent (regional visitors, who appear to be most interested in entertainment). This may help explain the fact that regional demand showed the slowest growth of any region from 2004 to 2005.

Figure 5.16 - Arrivals of Overnight Non resident Tourists to Jordan



	2005 Arrivals ('000s)	2001 - 2005 CAGR
Africa	30	15%
Asia Pacific	107	21%
Americas	112	21%
Europe	502	8%
Not Specified	217	8%
Middle east	1,829	19%

Source: Jordanian Tourism Board, 2007

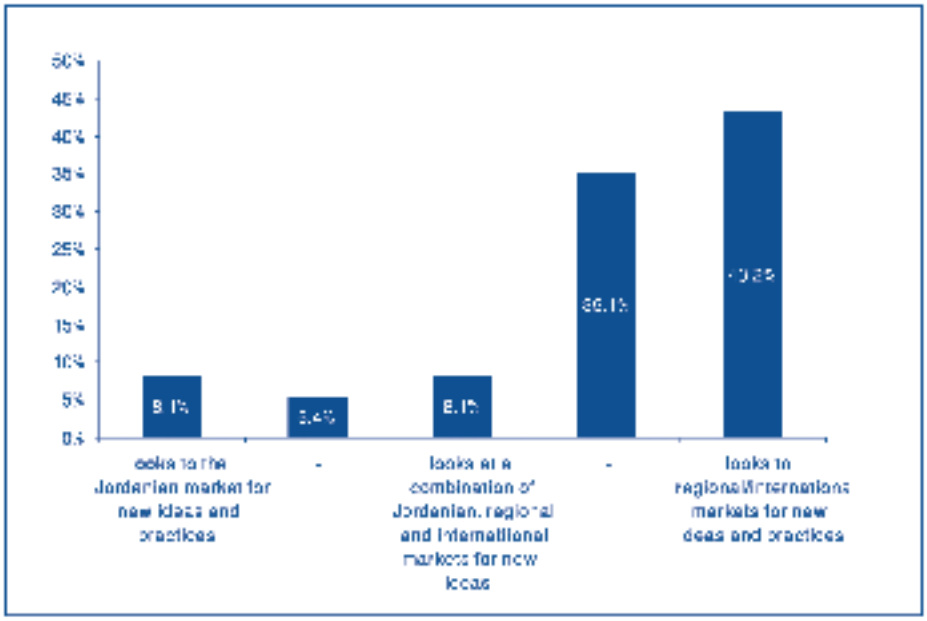
Another popular sub-sector with growth potential is health and wellness and medical tourism. This has become a multi-billion dollar industry worldwide, and the Jordanian Health Ministry has targeted for health care services for the elderly in the Middle East to double in the next five years. Jordan, which offers medical care costs at just 10% of those in the United States, has reacted to growth in this segment, opening an office in 1999 at Queen Alia International airport to assist foreign tourists via faster processing of immigration procedures, distribution of informational brochures on hospital and tourist sites, and making available direct transport to any hospital they choose. However, poor marketing and stiff competition from other countries in the region such as Egypt, Turkey, Lebanon, and the Gulf countries have stunted growth in this sub-sector to date. [0]

[110] Linda Al-Hindi, "Jordan Seeks to Become Medical Hot Spot of Middle East," Jordan Times, November 14, 2006.

Local Demand

As a result of a national campaign to promote Jordanians' sense of patriotism, domestic tourism was driven up in the year 2004. However, domestic tourist numbers slipped in 2005 and still further in 2006. Figure 5.18 below shows the most popular tourist locations for locals for the years 2006 and 2004. Together, these sites represent 80% of Jordan's local tourism visits. Total local tourist visits fell from 484,058 in 2004 to 385,657 in 2006, a drop of 20%. Notably, Um Qais, which represented over 30% of total local visitors in 2004, attracted barely half as many visitors in 2006.

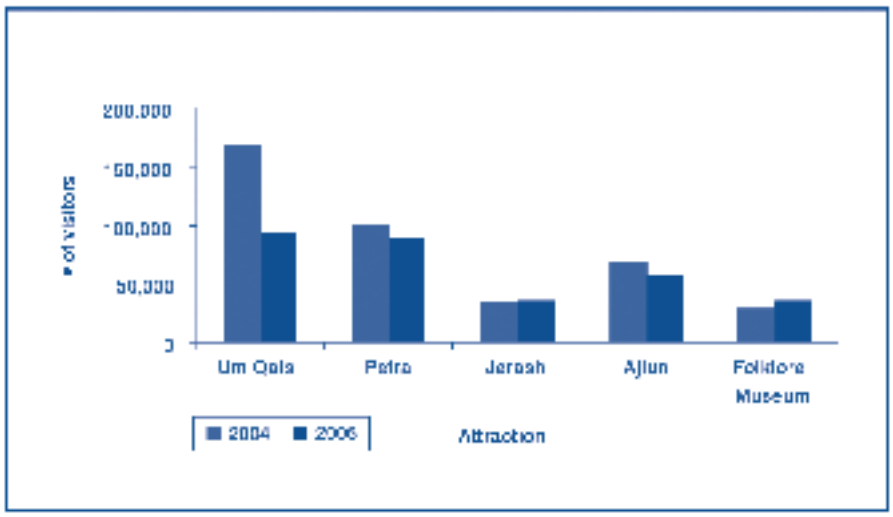
Figure 5.17 - When considering product development, my organization



Source: JHCO, Tourism Stakeholders' Online Survey, 2007

That alone accounts for 75,000 of the 100,000 fewer local visitors in Jordan in 2006 than in 2004. On a more positive note, the Red Sea resort of Aqaba attracted 244,000 tourists in the first half of 2007, an increase of 12% on the prior year.

Figure 5.18 - Local Visitors, 2004 and 2006



Source: Ministry of Tourism and Antiquities

[111] Ameinfo.com

Whether to local, regional or international demand, the tourism industry appears to be well-connected to its client base through a variety of marketing channels including internet, phone, referrals, and repeat customers. With competition only growing more intense in the region and internationally, Jordanian companies will require all of these channels to continue to attract tourists.

In many cases the sophistication of local demand is able to drive innovation and upgrading in an industry. However, the survey conducted by the JNCT suggested that it is far from being the case in Jordan. Seventy-eight percent of responding organizations indicated that they tend to look to regional or international markets for product development ideas (see Figure 5.17) and 61% indicated that tourism trends tend to appear outside the region. Likely partly as a result, only 18% suggested that regional consumers prefer Jordanian services to regional or international ones.

5.2 Factor Conditions

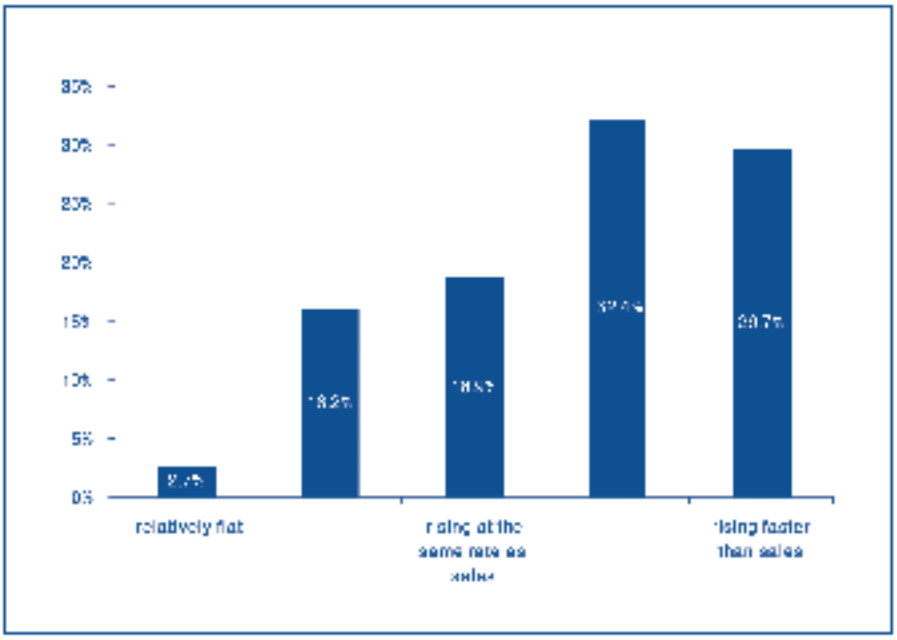
Cost

While the cost of doing business in tourism in Jordan, according to the industry survey, is on par with costs worldwide, operating costs are rising at an alarming rate. 62% of industry leaders responded that costs are rising extremely fast, with 30% indicating that they are rising faster than sales. Within operating costs, labor costs are seen to be on par with other countries. However, nearly 80% of respondents indicated that input costs are rising extremely fast, reflecting the macroeconomic inflationary pressures. According to the Travel and Tourism Competitiveness Index, Jordan enjoys a competitive cost-competitiveness rank (12th). However, this does not necessarily translate into a regional competitive advantage, given the similar low-cost positions enjoyed by other countries, particularly Egypt. Additionally, as noted earlier in the section on benchmarking, low-cost positions do not necessarily translate into a successful offer.

Infrastructure

Significantly, aspects of the country's tourism infrastructure (including air transport infrastructure (67th) and ICT infrastructure (72nd)) are relatively uncompetitive. Roads, which are good in Amman but poor outside of the capital, contribute to this mediocre ranking. Additional problems include a dearth of quality hotels at certain sites, as well as poor infrastructure in the sites themselves (such as toilets and phones).

Figure 5.18 - Costs for operating in Tourism are



Source : JNCC, Tourism Stakeholders Online Survey, 2007

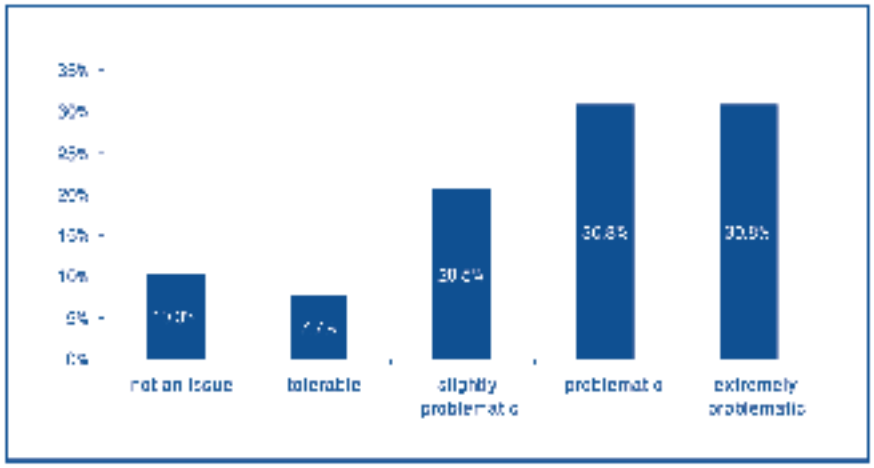
Jordan has three international airports, with Queen Alia Airport accepting the majority of passengers. Jordan is currently in the process of trying to upgrade its infrastructure by improving the networks for each mode of transportation (including air transport), as well as developing strategic plans for each form of transportation and revising laws and regulations governing investment into the transport sector, which is expected to introduce more competition into the sector. [2]

From 2003 to 2006 the number of restaurants has jumped by an estimated 62%. Corresponding employment has also increased dramatically, from 5,670 in 2002 to 10,720 in 2006 (an 89% increase). This is probably being fueled by the fast food industry, which is anticipated to grow at least 25% for the next five years. [3] By 2011, the development plan for tourism in Jordan 2007-2011 projects that growth will continue to increase pace, adding another 9,400 individuals. This is in marked contrast to the rest of the sectors related to the tourism industry, such as travel agencies and hotels, which have shown sluggish growth over that period of time.

Physical Resources

Jordan's physical tourism assets focus on the "golden triangle" of Wadi Rum, Petra, and Aqaba. The main attraction is Petra, the "Rose City", an enormous amphitheatre with immense façades that were carved by the Nabatines about 2,000 years ago. Petra was voted one of the "New Seven Wonders of the World" by a poll of 100 million online voters. Aqaba, known for its white sand beaches, is being marketed as the next "Red Sea Riviera".

Figure 5.20 - Inadequately educated workforce



Source: JHCC, Tourism Stakeholders' Online Survey, 2007

King Abdullah in 2001 launched the Aqaba Special Economic Zone Authority to assist investors in establishing themselves in the region.

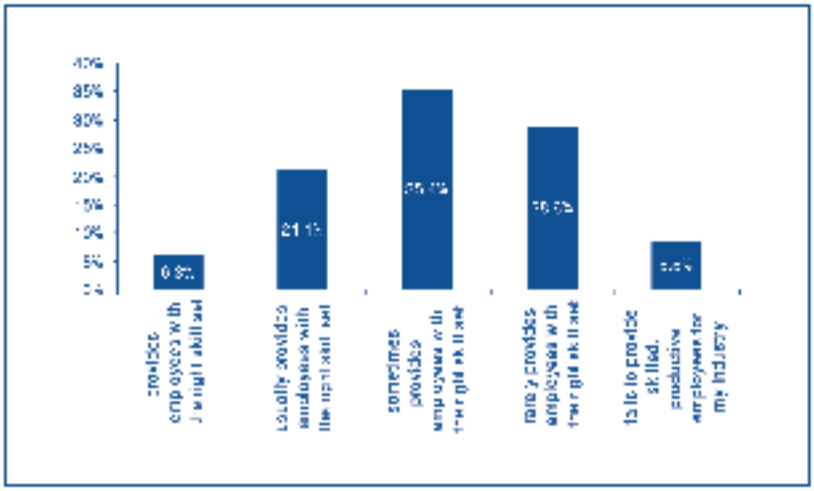
Some of the other attractions include the Dead Sea, as mentioned earlier a popular location, is the lowest point on earth at 1,286 feet below sea level. Not nearly as developed as the Israeli side, the Jordanian side of the Dead Sea has yet to see its potential fully realized. Amman has been Jordan's capital since 1921, the main attraction being the Roman amphitheatre in the centre. Jerash, a Graeco-Roman city less than one hour's drive from Amman, is famous for the Triumphal Arch and the Hippodrome. Jordan's historical sites are attractive and probably the strongest part of its offer. The Crusader Castles, mentioned earlier, are also of interest.

112 Euromonitor.
113 "Jordan's Tourism Vital to Economy", by Mohamed Kraishy, FAS Worldwide, US Department of Agriculture, October 2006.

Human Resources

Jordan suffers from a lack of availability of qualified labor, on which it scored 92nd in the T&T Index. Jordan suffers from a lack of top-notch tourism operators and skilled guides. This constraint on the industry is echoed strongly in the survey results. 83% highlighted that access to an educated workforce was problematic - only 10% of the industry do not view it as an issue. The large majority of the industry responded that skilled, experienced

Figure 5.21 - Aggregated University Total



Source : JHOD, Tourism Stakeholders' Online Survey, 2007

professionals are either hard to find or do not exist in both technical areas (92% of respondents) and management (84%). The problem is further exacerbated by the industry's inability to acquire qualified foreign labor, with 79% of organizations identifying this as a significant issue.

This data suggests that the educational system is not producing professionals with the right skills set, further compounding the effects of brain drain. Several schools offer tourism and hospitality programs, such as Jordan Applied University (JAU), College of Hospitality and Tourism Education; The Hashemite University/ Queen Rania's Institute of Tourism and Heritage; Yarmuk University/ Faculty of Archaeology and Anthropology; American Academy for Hotel Management; and Philadelphia University. However, only 6% of the industry responded that these schools are actually equipping graduates with the right skill set needed by the industry.

Table 5.3 – Employees in Tourism Sector by Position and Gender

Gender			Item
Male	Female	Total	
12,439	1,011	13,450	Hotels
5,661	808	6,469	Tourism Restaurants
2,150	753	2,903	Travel Agencies
1,248	40	1,288	Rent a Car Offices
419	111	530	Tourist Shops
616	28	644	Tourist Guides
616	0	616	Horses Guides
744	14	758	Tourist Transport Companies
34	9	43	Diving Centers
29	2	31	Water Sports
28,958	2,837	31,062	Total 2006

Source : Ministry of Tourism and Antiquities

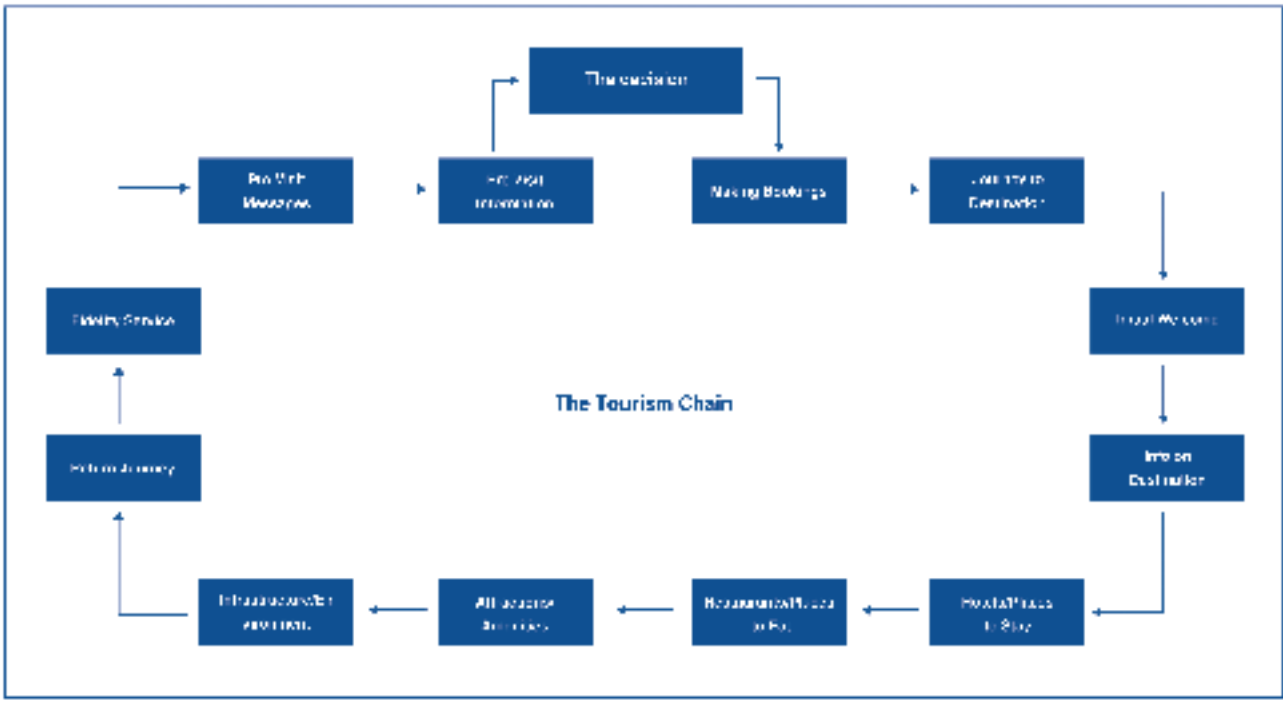
One additional point of note is that, although the number of employees in the tourist industry increased by nearly one-third from 2004 to 2006 (see Table 5.3), fewer than 10% of employees in the industry are women. This appears to be true across sectors, with the exception of travel agencies (where women represent over 25% of employees) and tourist shops (where over 1/5 of employees are women). [4]

[114] MOTA Statistics.

5.3 CONTEXT FOR STRATEGY AND RIVALRY

Tourism is an atypical industry in many ways because of the number of sectors it involves. It is perhaps best thought of as a chain, such as the one pictured below. [5]

Figure 5.22 – Tourism Chain



The tourism chain depicts the degree of interdependence that exists between sectors within the chain. Sectors commonly associated with the tourism industry--hotels, restaurants, attractions--are all highly dependent on information provided to their customers by others, often the government. Jordan's performance on these factors was covered in the previous section.

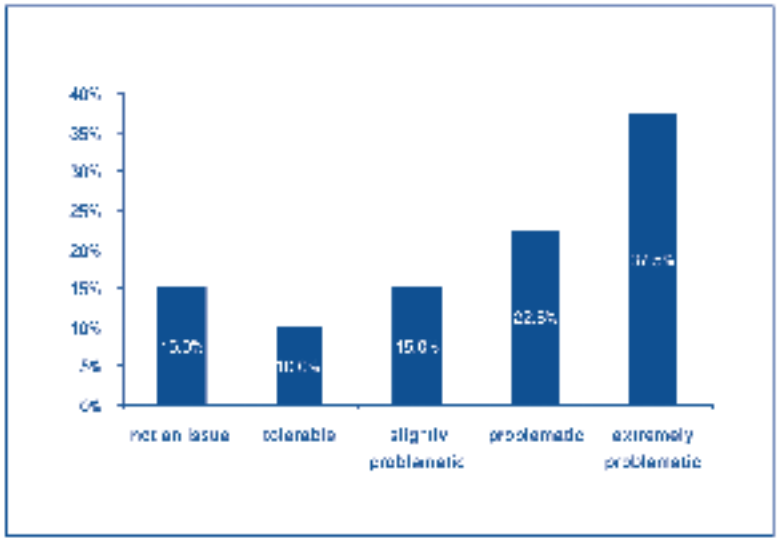
The structure of the tourism industry has important implications for countries interested in devoting resources to developing the sector. The most important is that it suggests the necessity of a national strategy, supported by strong public-private collaboration. Given the sheer number of "moving parts", one approach to developing the industry is to approach development in a coordinated fashion. The assumption here is that the system can break down if the moving parts do not move in a synchronized way. For instance, popular attractions that are not supported by adequate information and quality hotels can limit repeat business and damage the industry's image. Likewise, marketing efforts will not be sufficient if service quality is low or if the transport infrastructure is not in place. In cases where such widespread cooperation is difficult to achieve, another approach to development of the industry is to prioritize a few targeted initiatives that can be undertaken successfully, thereby building momentum for development on a larger scale.

[115] USING NATURAL AND CULTURAL HERITAGE FOR THE DEVELOPMENT OF SUSTAINABLE TOURISM IN NON-TRADITIONAL TOURISM DESTINATIONS (2002), http://ec.europa.eu/enterprise/services/tourism/studies_heritage.htm, European Commission: Enterprise and Industry, p. 28.

Both public and private sector leaders have invested a significant amount of time working together to develop a comprehensive, multi-faceted national tourism strategy. Yet three years after the launch of the National Tourism Strategy, nearly 90% of the industry cannot say that the strategy is focused on the right issues or is being implemented effectively.

Viewed within this context, Jordan, while it offers the natural advantages necessary to compete, falls short on some of the other, "created" factors. In addition to the infrastructure challenges highlighted earlier, the country has an inefficient system for rating hotels (four-star, five-star, etc.), as classification does not take into adequate account quality and service aspects. This is partly a result of the lack of appropriate standards and certification bodies (addressed below). Jordan also suffers from a lack of customer orientation. Jordan has (at least to date) struggled to develop innovative and effective ways of communicating its product to the outside world. Additionally, the sector tends to compete mainly on price as opposed to occupying high-value niches.

Figure 5.23 - Policy instability



Source: JNCC, Tourism Stakeholders' Online Survey, 2007

Competition in tourism in Jordan is relatively open and based on the underlying price and quality of services, rather than personal networks or market protection. Despite limited foreign investment in the sector, foreign businesses are able to enter and operate in the tourism sector. While tourism firms are largely left to compete on their own merits, policy uncertainty and a number of specific constraints appear to be holding back growth in the industry. 76% of industry respondents highlighted policy instability as a problem, with 38% explicitly stating that it is extremely problematic. Specifically, the industry expressed concern in the areas of labor regulation and taxation.

70% cited labor policies as too rigid and problematic, and over 90% of the industry believes that both tax rates and regulations are problematic (over 50% indicated extremely problematic and that taxes are suffocating the industry).

The results of the JNCT survey provide insight into why Jordan may struggle on "created" factors. When organizations were asked about Jordan's competitiveness relative to Egypt, Turkey, and the UAE (the benchmark countries examined in section 4), 75% indicated they believed Turkey was more competitive than Jordan, and 78% believed Egypt was more competitive. However, only 61% indicated that they believed the UAE was more competitive than Jordan, while 39% (a significant minority) suggested that they believed that Jordan was as competitive as or more competitive than the UAE.

These results are nearly the inverse of the T&T Index, which ranks Jordan more highly than Egypt and Turkey but much less competitive than the UAE. It appears that a significant number of organizations in Jordan's tourism sector view the "tourism" sector through the narrow lens of endowed factors (on which Egypt and Turkey are more competitive than the UAE) and less on the factors within a country's sphere of influence.
Tourism based on cultural heritage (which, as discussed earlier, makes up a significant percentage of Jordan's international market) has its own set of very specific characteristics. A recent European Commission report [6] identified ten key success factors for this sub-sector (many of which can be generalized to the sector as a whole). They included the following:

1. Significance (the importance of the cultural or natural heritage)
2. Distinctiveness (a unique selling proposition)
3. Clustering and Developing Itineraries (the degree to which sites are pooled or can be pooled together, often around a "growth pole")
4. Branding and Networking (the process of building an image and reputation)
5. Access (including weather and distance)
6. Seasonality
7. Partnership (public-private dialogue and cooperation)
8. Strategic Planning
9. Accessibility (presenting the natural and cultural heritage in a way that will enable tourists to learn from them)
10. Sustainability

The importance of strategic planning, prioritization, and partnership was discussed earlier. In addition, two of these factors (clustering and developing itineraries, and sustainability) are likely to have immediate relevancy in Jordan's case due to the tremendous opportunities presented by the heightened status of Petra.

Petra's recent recognition as one of the New Seven Wonders is anticipated to give Jordan an immediate natural "growth pole" around which to drive tourists to the country and will, significantly, serve as free publicity. Some Jordanian officials believe tourism to Petra will double within a year. This will likely allow Jordan to draw an increased number of high-value tourists from Europe as well as from the United States which, as discussed earlier, represent between them about ¾ of world expenditures on tourism.

However, a substantial influx of visitors, without proper planning, could jeopardize the sustainability of the Site, much in the same way as Peru's Macchu Picchu (incidentally also recently so named) has begun suffering erosion in recent years due to the large number of tourists. The challenge will be to preserve the Site in such a way as to guarantee its ability to drive Jordan's tourism industry in the future. It also remains to be seen how well Jordan will be able to translate Petra into the core of an industry cluster by assuring that it becomes a stop on an itinerary rather than the sole motive for a visit.

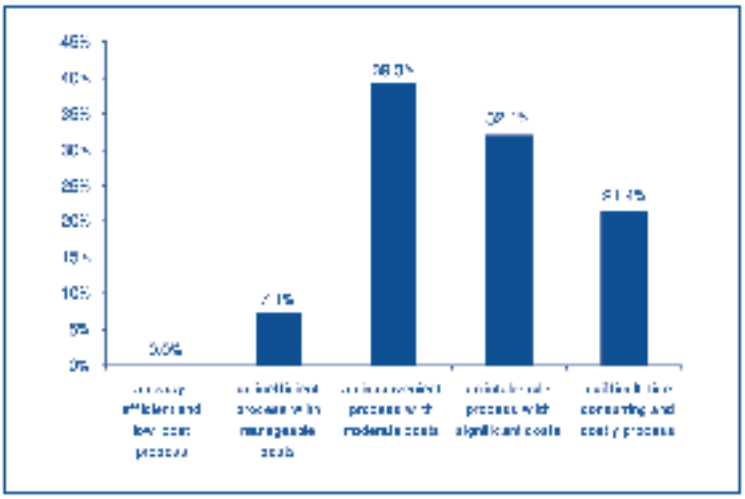
[116] Using Natural and Cultural Heritage for the Development of Sustainable Tourism in Non-Traditional Tourism Destinations (2002) http://ec.europa.eu/enterprise/services/tourism/studies_heritage.htm, European Commission: Enterprise and Industry, p. 29.

5.4 Related and Supporting Industries

The interdependence of the tourism industry requires institutional mechanisms to monitor and uphold consistent standards across the segments of the industry. The large majority of tourism businesses in Jordan are not certified under any type of standards and very few meet international standards. While licensing and accreditation services do exist, according to the industry licenses, standards and accreditations do not reflect international standards and are poorly structured and inconsistently enforced, if at all.

Many studies of the tourism industry have described elements of the tourism chain (such as restaurants and hotels) as "related and supporting industries". This study considers them a central part of the industry,

Figure 5.24 - Importing specialized materials for tourism:



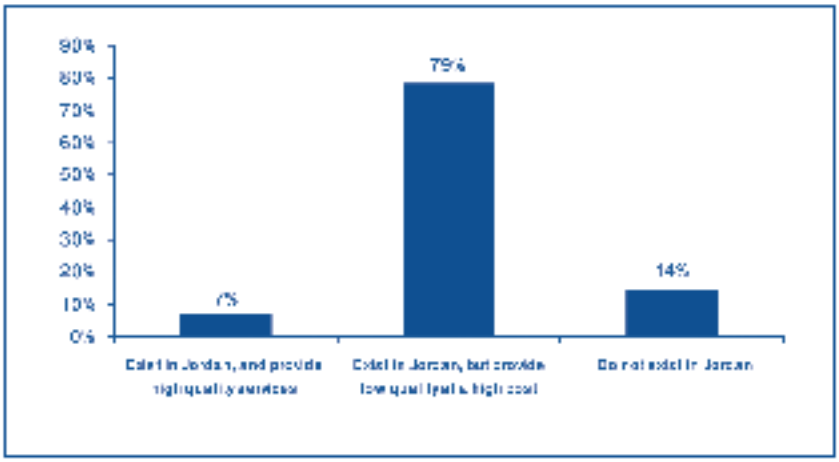
Source: JNCC, current Stakeholders' Online Survey, 2007

When asked about the quality and cost of the supporting services to the tourism industry, industry leaders resoundingly responded that the supporting services available in Jordan provide low quality at a high cost. Further constraining the industry, the import of any specialized materials or services not currently available in Jordan is seen to be difficult, time consuming, and costly to acquire and bring into Jordan.

According to the surveys, the supporting industry associations within the tourism sector are offering only limited responsiveness and value to their members. The performance of these associations varies dramatically.

Jordan offers high quality medical and educational institutions. However, despite the quality of the educational system, it does not appear especially focused on tourism, given the country's low scores on most aspects of provision of qualified labor. In addition, it is likely that the capacity of the educational institutions could be better leveraged. In the JNCT survey, a full 95% of respondents answered that research institutions that contribute to the competitiveness of the tourism industry do not exist or do not positively impact the sector's competitiveness.

Figure 5.25 - Organizations that provide specialized,technical supporting services for the tourism industry



Source : JNCO. Tourism Stakeholders Online Survey, 2007

Many other related and supporting industries are not especially well developed. Generally little use is made of IT in the tourism sector. Outside of airlines and some of the large chain hotels, there appears to be very little recognition within business of how IT can enhance their operations. Standards and certification bodies are also not well developed, as alluded to above in the discussion on strategy and rivalry. In the JNCT survey, only 4% of responding organizations believed that organizations providing high quality certification standards exist in Jordan (see Figure 5.25).

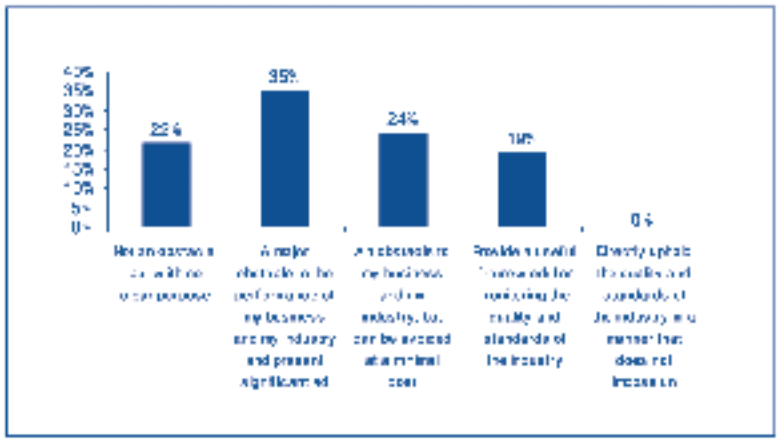
The overall weakness of the tourism sector's related and supporting industries was reflected in the survey conducted by the JNCT, which indicated that 79% of respondents indicated that relevant technical and supporting services exist but are of low quality.

5.5 Regulations and the Role of Government

The role of government bears mention, as a supportive and efficient bureaucracy is generally considered a key component of successful development of the tourism industry.

Jordan scored well (30th overall) on its T&T regulatory framework. This was driven primarily by its performance on safety and security (19th) and prioritization of T&T strategies (17th). In fact, Jordan scored 7th in overall government expenditure on travel and tourism. The most notable change for the better in recent years is that the government appears to have recognized the importance of tourism as an economic driver and, while it has handled the implementation of its tourism strategies imperfectly, it is at least taking steps in the right direction.

Figure 5.26 - Government regulations of Tourismare: (choose one)



Source: JNCO, Tourism Stakeholders' Online Survey, 2007

Additionally, proposed changes in the regulatory environment should enhance competition in the transport sector (especially in the deregulation of the airline sector), ultimately increasing quality and driving down costs.

Despite the positive support offered by the government to the tourism sector, this support is not yet translating into a constructive relationship between the public and private sectors. Over 75% of the industry believes that government bureaucracy is holding back the industry - over 80% state that government regulations are a direct obstacle to the industry or serve no clear purpose. When asked if government regulation is getting better, only 19% indicated that it is improving.

A few areas in which the government could still play a more productive role include the amount and quality of training delivered to key personnel, especially guides; more attention paid to some of the smaller but still important sites that will ultimately drive the country's ability to retain tourists for a longer period of time; and a stronger overall promotion effort to communicate Jordan's offer and to build the country's brand. This includes the development of new products, research on new markets and niches, the devotion of more resources to international marketing, and greater focus on high potential markets.

A final consideration is to enhance the frequency, quality, and results of public-private dialogue. The JNCT survey revealed that 66% of respondents resolved issues through personal connections (including individual government officials), against only 24% that utilized an industry association or formal public-private dialogue mechanism.

6. Constraints to Growth

Jordan's primary constraints to growth are laid out in its National Tourism Strategy, 2004-2010. Most of these have been alluded to earlier in the study, but the key constraints will be highlighted here.

Skills gap. Jordan suffers from a shortage of skills relevant to the tourism sector. This is a function both of insufficient training at the university level and a lack of on-the-job preparation. A survey prepared by a USAID-funded project [7] recently identified 6 priority areas of technical shortfall: communication skills; customer care and quality; supervisory management skills; professional skills training in operational areas; marketing and sales techniques; and training of trainer skills.

Perception that Jordan is unsafe. Due largely to its location in the war-torn Middle East, as well as the 2005 Amman bombings, Jordan, despite a solid safety and security rating, continues to be viewed as a potential target of terrorism.

Lack of adequate international marketing. Current spending levels on marketing are largely insufficient and do not appear to have a clear target audience due to a lack of adequate customer knowledge. Further efforts need to be made to build the country's brand and image. Jordan will likely benefit, however, from free publicity accorded it as a result of Petra's new status.

Lack of partnerships (Public-private and public-public). Inadequate dialogue and coordination continue to plague the industry, especially between government agencies at the operational and policy levels.

Inability to extend the stays of tourists. As documented earlier, Jordan is on the low-end vis-à-vis other benchmark countries on tourist receipts per visit. While this is partly a function of its relatively low-cost position, it is also driven by the relatively short length of visitor stays, low expenditure per day, a lack of coordination among visitor services upon arrival, and a lack of information on the diversity and range of Jordan's tourism product.

Market research and intelligence. Jordan lacks sophisticated data on customer demand. This is likely to be related, at least in part, to the lack of qualified personnel noted above.

Over-reliance on traditional attractions. Because Jordan has been blessed with unique attractions (Petra among them), it seems to have developed an over-reliance on these "inherited" resources, paying inadequate attention to other factors that enhance the customer experience.

[117] Ruddy, Nicholas. "Tourism Human Resources Development Strategy for Jordan", November 15, 2004.

Medical Tourism

MEDICAL TOURISM

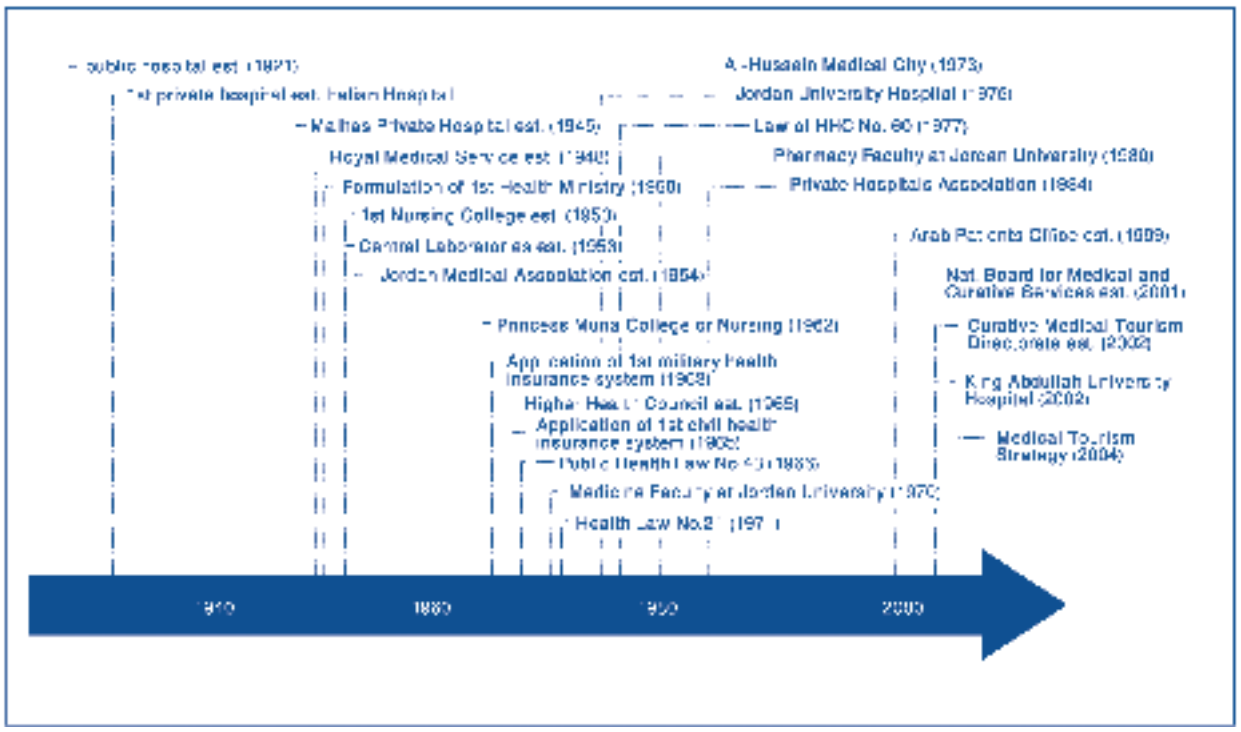
1. HISTORY AND CONTEXT

Jordan has long held a reputation in the Middle East region for its commitment to offering high quality healthcare to its population. As a result, a strong medical services sector has emerged in Jordan consisting of a variety of health care providers across the public and private sectors. While the sector has developed primarily to serve the domestic population, the quality of its services has built a reputation in the region attracting foreign patients that come for a variety of treatments. This chapter focuses on the attraction of foreign patients to Jordan, referred to as medical tourism. The medical tourism industry in Jordan attracted around 108,000 foreign patients in 2005 (last year available). The industry has grown modestly over the past decade, up from 98,000 patients in 1998. In 2005, total revenues generated from foreign patients were estimated at JD 533 million, up from JD 507 million in 2001. Nearly all foreign patients originate from the Middle East region, with the highest percentage arriving from Yemen (29%), Libya (16%), Palestine (12%) and Sudan (7%) . [8] Arab patients come to Jordan for the overall quality of care, the level of medical training of the doctors, the cost of treatment, and the existing medical protocols.

KEY FIGURES:

- **Revenues of USD 700 million from foreign patients annually over the last 5 years**
- **108,000 foreign patient in 2005**
- **Largest percentage from MENA**
- **40,000 employees in 2006**

Figure 6.1 - Timeline for the Jordan Medical Services Industry



[118] Annual Figures for Medical Tourists, Medical Tourism Directorate, 2005

Given the numerous benefits from attracting foreign patients to Jordan, there has been broad interest and commitment from both the public and private sectors to increase the medical tourism arrivals to Jordan. The Ministry of Health, among other institutions, has investigated the potential of this sector through analytical studies in collaboration with the main entities in the medical tourism sector; i.e. Ministry of the External Affairs, Jordan Tourism Board, Medical Association, and Pharmacists' Association. This chapter builds on the wealth of analysis already conducted to date and highlights the current issues that the industry is facing in enhancing its attraction to regional patients and expanding its base to international patients.

As a percentage of GDP, Jordan's expenditure on health is second in the region only to Lebanon, with estimated average health care expenditures per capita of JD 162 for 2005. This figure is expected to rise as the population ages in Jordan. Jordan spent 9.8% of GDP on health in 2005 (the last available year for data), ranking Jordan in health expenditure as a percentage of GDP among the most advanced healthcare systems in Europe and North America. In 2005, the aggregated total expenditure on medical services was JD 890 million for the year. [9] For the same year, the allocated budget for the Ministry of Health was around JD 191 million, and for the Royal Medical Services was JD 56 million.

Table 6.1 – Health Expenditure and Financing

	HEALTH EXPENDITURE (% OF TOTAL)	HEALTH FINANCING (% OF TOTAL)
Public	58%	45%
Private	38%	47%
Donors	4%	8%

Source: Health Sector (2001-2005), Ministry of Financial

Health services in Jordan are financed and administered by both public and private entities. Despite the government's strong influence in financing, regulating, and administering services, private providers have taken root and grown in a manner that both complements and supplements public sector activities. As highlighted in Table 6.1, the private sector represents 47% of financing for healthcare services and 38% of expenditure.The private sector manages over half of the hospitals operating in Jordan and represents one-third of the hospital beds.

The funds in the health sector are sourced as shown in the table. Public funds represent financing from the Ministry of Finance, Ministry of Health, Royal Medical Services, and University hospitals. The private funds represent financing from commercial insurance firms, the expenditures of self-insured companies, and the out-of-pocket expenditures for health care from private funds. On the expenditure side, the public sector represents the majority of services provided in Jordan. The gap in donor financing and donor expenditures illustrates the strength of the existing system. Rather than administer the services themselves, donors are able to rely on the service structures already in place and concentrate more resources in simply financing health activities.

[119] Health Sector Expenditures (2001 - 2005), Ministry of Finance

Curative care accounts for 58% of public health expenditure, preventive and primary care for 27%, training for 3%, administration for 5%, and miscellaneous for 7%. The MoH provides 49% of outpatient visits and 55% of hospital admissions in the country; the private sector administers over one-third of the hospital beds and provides 40% of outpatient visits and 21% of admissions, while the RMS provides 11% of outpatient visits and 22% of hospital admissions. Only 6% of the population has multiple insurance coverage. The governance of MOH and RMS hospitals is highly centralized [20].

The Ministry of Health is the primary regulatory body for health service. The MOH is supported by the Jordan Medical Association in maintaining standards for care and the two institutions share joint responsibility for regulating the hospitalization services pricing and physicians' fees; the price and fees list is prepared and controlled by the ministry.

As discussed in more detail below, international accreditation of hospitals is a major constraint for the development of the medical tourism industry. The Ministry of Health has been developing an accreditation system for medical institutions that will adopt international standards for hospitals; this is expected to enhance medical service quality, as well as the overall competitive advantage of the medical sector.

There is a need for specialization among medical services' providers. Despite their increasing number, very few specialty hospitals are operating in the sector; according to health experts, this will impact positively both performance and quality.

2. Regional and International Market Trends

The medical tourism industry only just emerged on the global stage in the past decade. As such, estimates of market size and growth vary widely, but receipts worldwide total in the tens of billions of dollars with country growth rates ranging up to 30% annually [2]. Motives vary for patients looking outside the borders of their own countries, but can be generally related to 2 segments: 1. patients seeking more affordable care, mostly in elective procedures; or 2. patients seeking quality care not currently available in their country of residence.

As the population ages in Europe, Asia, and the United States and healthcare costs continue to grow at rates above inflation, the search for affordability is driving patients from higher income countries to seek alternative care options. In the United States, 47 million people are without health coverage and over 130 million people have no dental insurance. Estimates from 150,000 to 500,000 Americans are traveling each year to foreign countries for medical services. The savings that they are capturing in going overseas for services can be 30-80%. This is growing by 15-30% per year [22]. In Asia, consumer expenditure on healthcare services is expected to grow from USD $90 billion to USD $188 billion by 2013 [23]. In Britain and Canada, slow and inefficient national health systems are forcing patients to go elsewhere for treatment. The waiting time for some procedures, including hip replacement surgery, can be over a year. In Singapore, Hong Kong, Thailand, Colombia, the Philippines, or India, a patient could feasibly have an operation the day after their arrival [24]. In the case of Britain, patients are increasingly encouraged to seek treatment outside the British system and are still eligible for reimbursement [25].

120 Jordan National Health Accounts, 2000
121 American Medical Society, "Medical Travel Outside the U.S.," June 2007
122 FT.com, "Medical tourism's popularity on the rise," June 22, 2007.
123 Express Healthcare Management, "Medical tourism boom takes Singapore by storm," July 2005.
124 Health Tourism 2.0, World Health Tourism Congress, Retrieved on 2007-04-13
125 University of Delaware, UDAILY, "Medical tourism growing worldwide," July 25, 2005.

Competition for foreign medical patients is quickly evolving from a cost-based model in which service providers attract customers simply on cost, to a quality and service-oriented model where service providers compete on the quality, level of service, and convenience for the patient. Patients from higher income countries with advanced health care systems expect significant cost savings but with a level of quality and service equal or better to that they would find in their home country [26]. This universal expectation of quality is driving a global convergence of medical standards and services. Evidence of this can be seen in the proliferation of international accreditation and standards systems, the outsourcing of teleradiology, the approval of pharmaceutical trials in foreign countries, and the mobility of doctors and nurses across countries.

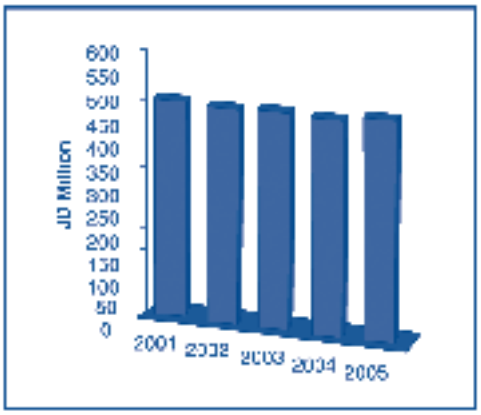
Regional and global competition for foreign patients is leading many hospitals and healthcare systems to upgrade their service models to position themselves to attract the highest value patient. Hospitals and clinics are teaming with tour operators to offer full package deals that include everything from home pick-up to the operation or service, to the recovery, to the drop-off back at the patient's home. Major international hospitals are promoting high doctor- and nurse-to-patient ratios and four-star equivalent single patient rooms with dedicated nurses 24 hours per day.

Locations and specific hospitals are increasingly promoting certain specializations and demonstrating that they can reach international scale. The Escort Heart Institute and Research Center in India, for example, performs more than 15,000 heart surgeries per year and has a death rate among patients during surgery of just 0.8%. However, to reach and maintain that caliber of treatment, service providers are increasingly aware of the need for a sophisticated research infrastructure to support the health service providers. From India to Dubai, healthcare providers in medical tourism are actively creating linkages with strong medical research institutions to ensure that they are adopting the latest techniques and technologies.

3. Recent Performance of Jordan's Industry

The contribution of health services to GDP increased from 2.8% in
mainly generated from the public sector (68%) and the remaining (32
tivities and private hospitals [28]. Value-added in health services with
between 2001 and 2006 [29]. The increasing rate of the value-added
slower than the sectoral average, i.e. in the aforementioned period

Figure 6.2 - Medical Tourism Receipts

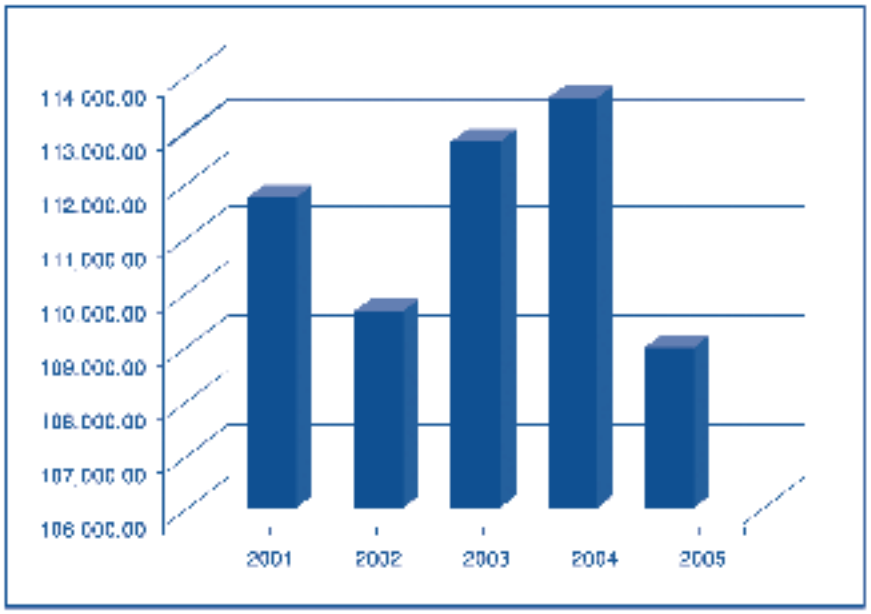


Source : Ministry of Health

[126] American Medical Society, "Medical Travel Outside the U.S.," June 2007.
[127] Ministry of Health, Annual Statistics Book, 2005
[128] Medical Tourism Sector Strategy, (2005 - 2010)
[129] Ministry of Health, Annual Statistics Book, 2006

Jordan's health sector has earned on average around USD $700 million per year over the past 5 years from foreign patients. Despite these earnings, the industry has demonstrated very little dynamism and growth potential. From 1998 to 2005, the number of incoming patients grew just 2% per year from 98,000 to 108,000. Similarly, medical tourism receipts grew by just 1.2% annually from 2001 to 2005. Despite significant growth regionally and internationally in the market, Jordan's total medical tourism revenues have stayed fairly flat and its per tourist revenues actually decreased. In 2004, the Ministry of Health developed a strategy to increase the annual growth rate of the industry to 8% by 2010, yet to date, there is very little evidence that the industry's efforts are delivering the higher growth expected.

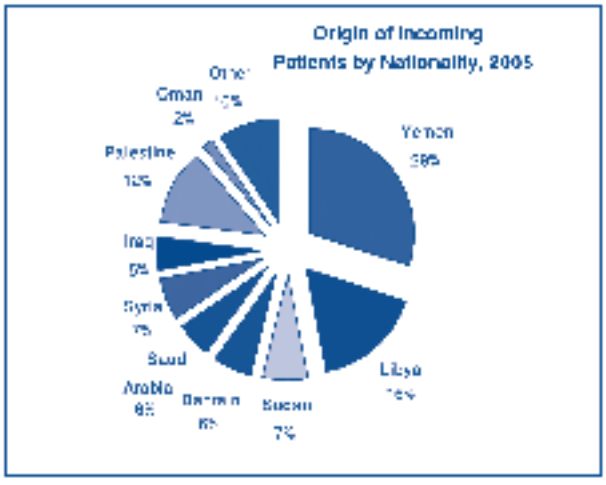
Figure 6.3 – Incoming Patients 2001-2005



Source : Ministry of Health

Figure 6.4 shows the breakdown of incoming Arab patients by nationality. The highest percentage of patients come to Jordan from Yemen (29%), followed by Libya (16%), Palestine (12%), and Sudan (7%). Arab patients come to Jordan seeking medical treatment because of its comparatively advanced medical system and its strong medical services infrastructure, including the number of qualified medical staff, such as the physicians per population ratio and hospitals beds/inhabitants ratio. As illustrated in Figure 6.6, Jordan eclipses the other countries ratios of physicians per inhabitant and all but Libya in the number of beds per inhabitant [30].
In addition, the cost of the treatment in Jordan is considered more affordable than other countries in the region such as Lebanon.

Figure 6.4 – Incoming Patients by Nationality, 2005

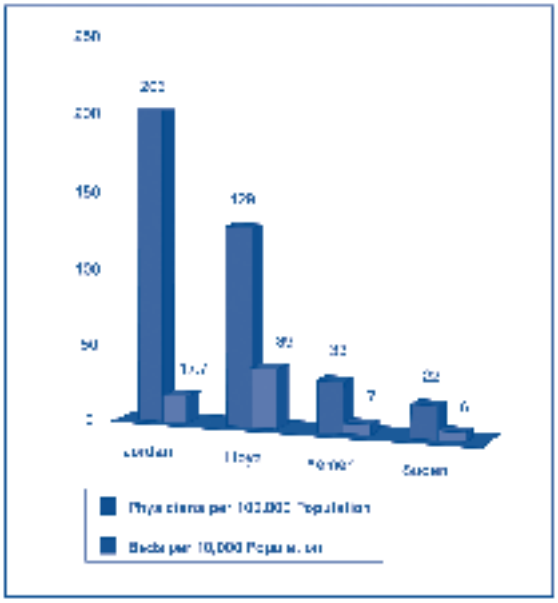


Source: Annual Figures for Medical Tourism, Medical Tourism Directorate 2005

Finally, according to the International Relations Directorate in the Ministry of Health, the existing medical protocols in Jordan and bilateral agreements signed between private hospitals and corporations across the region have a significant role in attracting Arab patients to Jordan.

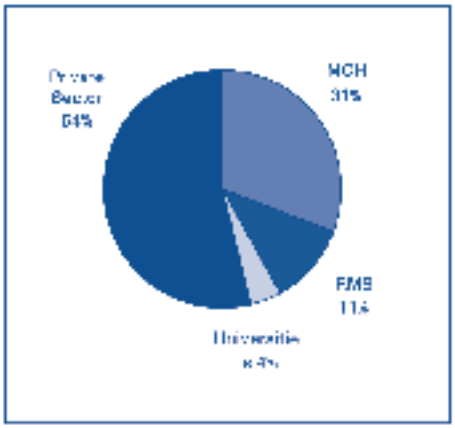
130 World Health Estimates, WHO, 2006

Figure 6.6 - Physicians / Beds per Population



Source: World Health Estimates, WHO 2006

Figure 6.6 - Distribution of Employment in the Medical Sector

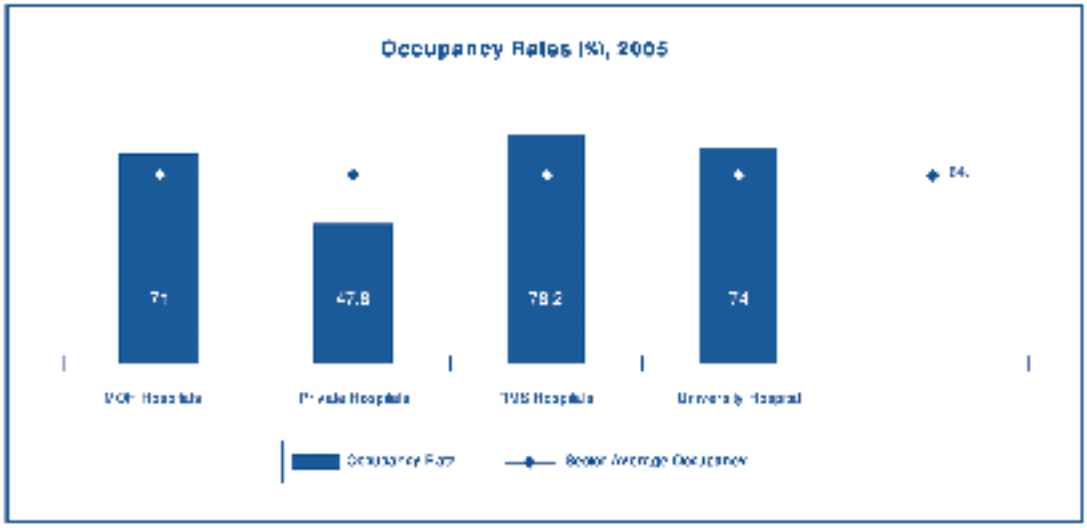


Source: Ministry of Health

The Medical Sector in Jordan employs nearly 40,000 people according to the statistics of the Ministry of Health for 2006. In the first few years of this decade, employment grew from slightly over 30,000 to its current level but has remained constant since 2004. The private sector is actually the largest employer with over 21,000 employees, representing 54% of the total medical workforce.

Occupancy rates in Jordan vary between the public and private sector. Private hospital rates ran slightly below 50% in 2005, and below the average for the sector (64.1%) [3] . The rates indicate excess capacity in private hospitals and highlight that the slow growth in revenues from foreign patients is likely not due to overall supply constraints.

Figure 6.7: Hospital Occupancy Rates in Jordan



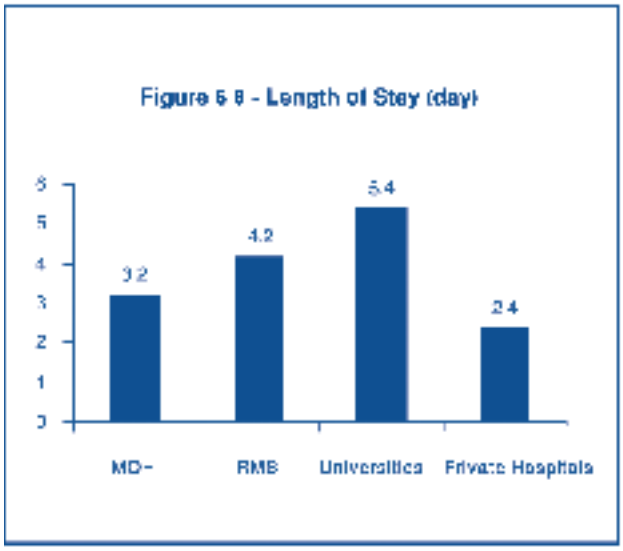
Source: Ministry of Health

[131] Ministry Of Health, Annual Statistics Book, 2006

However, according to the study conducted by the Jordan National Competitiveness Team in 2004, and consistent with the overall global market trends, the occupancy rates increase in the private hospitals as the size and specializations increase [32]. As shown in the figure below, the occupancy rate surpasses 70% in specialized medium-sized hospitals. Yet, only 23% of private hospitals in Jordan are specialized and 92% of the private hospitals are small-sized [33].

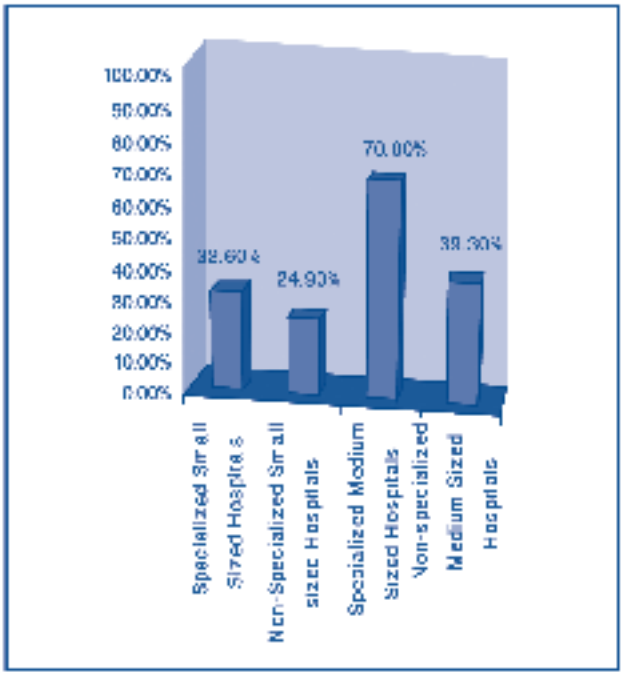
Part of the difference in occupancy rates may also be explained by differences in the average length of stay in the hospital. The overall length of stay in Jordanian hospitals has remained relatively constant since 2001, averaging 3.3 days per patient stay. However, these numbers vary considerably by type of hospital. Public and university hospitals range between 3.2 and 5.4 days where the private hospitals average just 2.4 days [34].

Figure 6.8: Length of Stay (day)



Source: Ministry of Health

6.9 Effect of Specialization on Occupancy Rates(%)



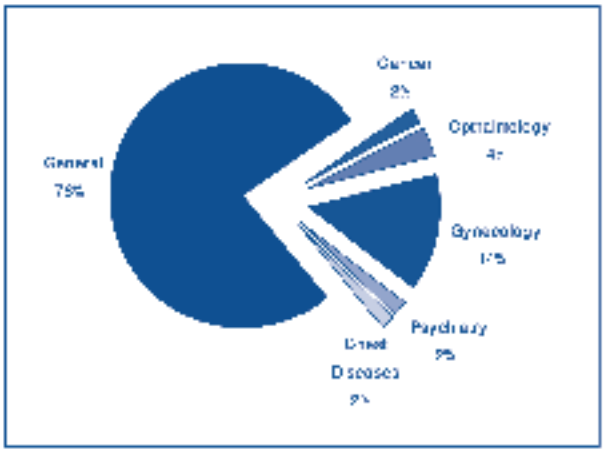
Source: JV 2020

Generally speaking, Jordan's Medical Tourism Sector offers competitive costs of treatment; for instance, medical care costs are about 10% of those in the US. However, the large majority of foreign patients still come only from countries in the region like Sudan, Iraq, Libya, and the Gulf States [35]. Most of these patients arrive in Jordan for heart and neurological surgeries, kidney replacements, orthopedic and orthodontic operations, and medical follow-ups.

Out of the 58 private hospitals providing health services, 43 are non-specialized hospitals offering Cardiology, Brain & Neurology, Orthopedics, and Internal Diseases treatment services figure 6.10.

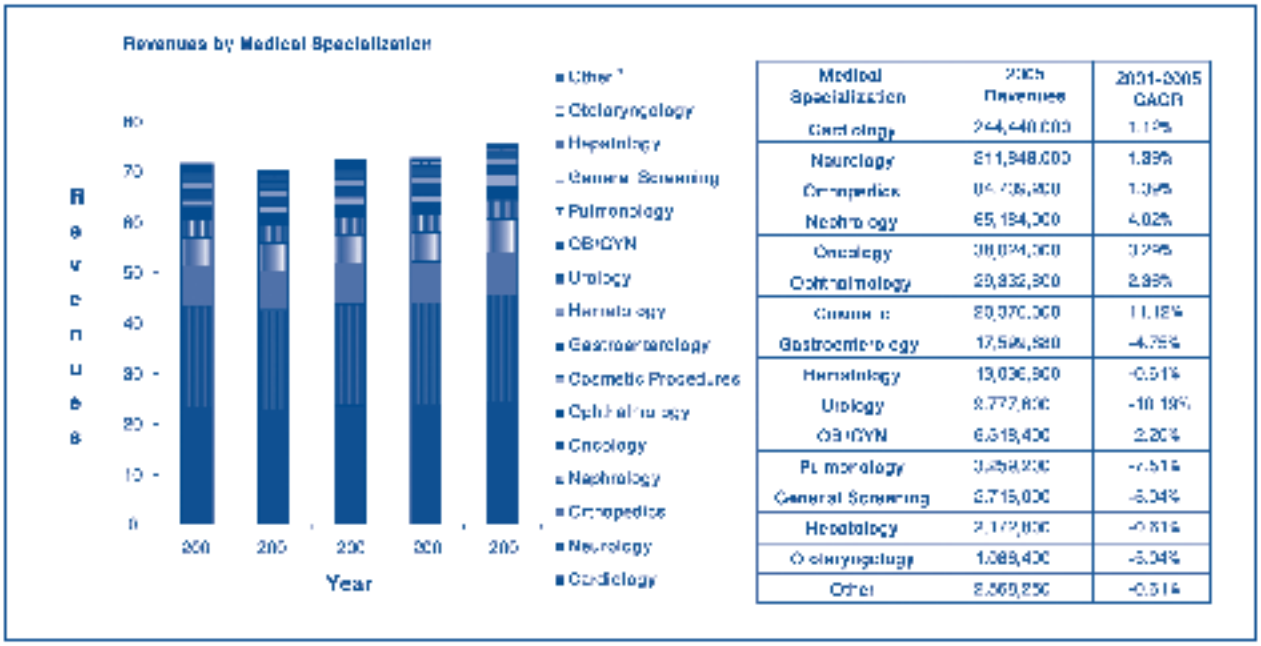
[132] Medical Tourism Study, Jordan Competitiveness Team, Ministry of Planning and International Cooperation, 2004
[133] Medical Services, Jordan Vision 2020 Phase II
[134] Ministry Of Health, Annual Statistics Book, 2006
[135] Annual Figures for Medical Tourists, Medical Tourism Directorate, 2005

Figure 6.10 Breakdown of Hospitalization according Specialization



Source: Ministry Of Health, Annual Statistics Book, 2006

Figure 6.11 - Revenue by Medical Specialization



Medical Specialization	2005 Revenues	2001-2005 CAGR
Cardiology	244,440,000	1.12%
Neurology	211,948,000	1.89%
Orthopedics	84,436,800	1.06%
Nephrology	65,184,000	4.02%
Oncology	38,094,000	3.99%
Ophthalmology	29,832,000	2.89%
Urology	29,070,000	11.18%
Gastroenterology	17,568,000	-4.75%
Hematology	13,036,800	-0.51%
Urology	9,777,600	-10.19%
OB/GYN	6,518,400	2.20%
Pulmonology	3,258,200	-7.51%
General Screening	2,715,000	-5.04%
Hepatology	2,172,000	-0.51%
Otolaryngology	1,086,400	-5.04%
Other	2,560,250	-0.51%

Source: Other includes , Psychology , Grand surgery Dermatology Dentistry and Pediatrics

4. Regional and International Benchmarking

As the medical tourism industry has grown into a multi-billion-dollar industry worldwide, Jordan is facing relentlessly stiff competition from both countries in the region like Egypt, Saudi Arabia, and Lebanon as well as other countries worldwide. In a recent sector survey, 85% of leaders in the medical tourism industry characterized Jordan as "leading the region" or highly competitive. This indicates that Jordan is aware of its strengths in the industry; however, this result may also indicate that the industry is less aware of the competitive threats to Jordan's future performance both regionally and internationally. When comparing itself to the global medical tourism industry, 15% of respondents classified Jordan as world-class and another 26% indicated that Jordan is above average on the world market. Yet, with medical tourist revenues flat in a high growth regional and global industry, Jordan is clearly facing significant competition. As a comparable benchmark, in the period from 2002 to 2005, arrivals of foreign patients to India rose from 150,000 to over 500,000 per year [36]. According to a recent study by the government, the annual receipts from medical tourism are expected to grow to USD $2.2 billion by 2012.

While Jordan's medical capacity compares well to the countries of origin of most of its client patients, it compares below average for hospital beds per 1,000 people. However, Jordan is second only to Lebanon in the benchmarking peer group in number of physicians per 1,000 people.

Figure 6.12 Hospital Beds per 1000 people

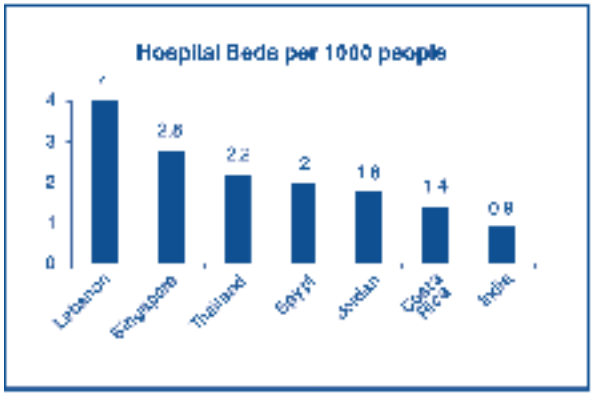
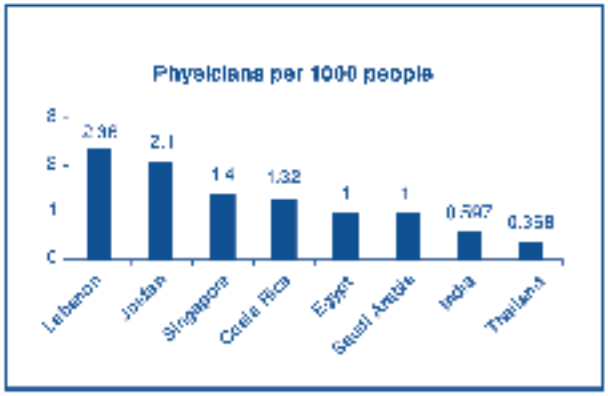
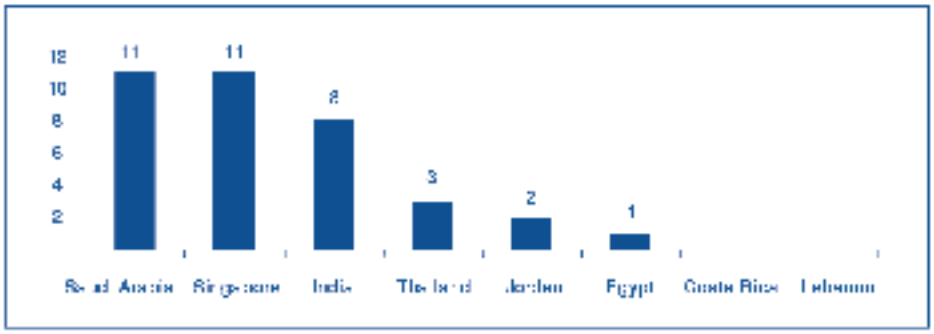


Figure 6.13 Hospital Beds per 1000 people



One emerging international benchmark for the quality and capacity of country medical systems is the number of hospitals accredited by the organization Joint Commission International. A hospital in Jordan recently achieved accreditation, but this

Figure 6.14 - Accredited Hospitals by Joint Commission International



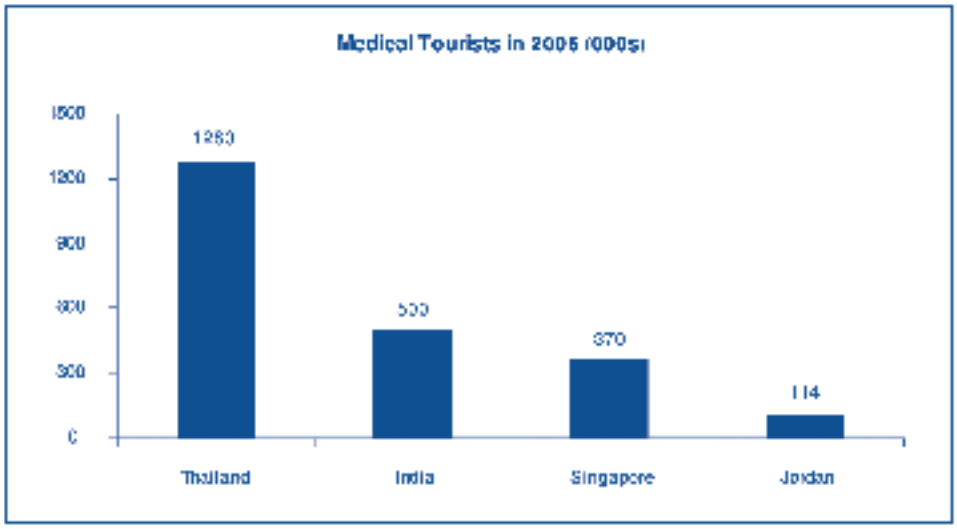
Source: Joint Commission International, 2007

[136] University of Delaware, UDAILY, "Medical tourism growing worldwide," July 25, 2005.

still only gives Jordan a total of 2 interationally accredited hospitals, well behind Saudi Arabia, Singapore, and India.

Most countries still do not track the number of foreign patients per year that come for medical services. However, among the countries that do, Jordan is well behind, with Thailand as the clear leader.

Figure 6.15 Medical Tourists in 2005 (000s)



Bumrungrad Hospital in Thailand, alone, has over 200 surgeons board certified in the United States and serves an estimated 400,000 foreigners per year, almost 4 times Jordan's total [37]. Escort Heart Institute and Research Center in India performs more than 15,000 heart surgeries per year and has a death rate among patients during surgery of only 0.8% [38].

India

Since 2001, arrival of foreign medical tourists to India has grown at over 35% per year with total annual receipts estimated to reach USD $333 million in 2004. Yet much of India's health infrastructure is weak or at risk. Annual per capita public health expenditure is just 0.8% of GDP, down from 1.3% in the 1990s. Per capita expenditure is just USD $4.49 [39] and currently there are only 1.5 hospital beds per 1,000 in India. As a result, in 2003 the Minister of Finance endorsed a policy and separate budget to transform India into a "global health destination," [40] confirming India's commitment to develop and strengthen the industry. Since 2003 a series of public initiatives and private investments have expanded India's capabilities and capacity in medical tourism.

In 2006, based on a series of analyses highlighting a significant gap in workforce skills in healthcare, the Indian government launched an initiative aimed at closing the gap. Plans are currently being implemented to build a network of health institutes aimed at providing a managerial cadre of medical professionals to lead the expansion and upgrade the system. In total, 5 institutes of public health will be established to train 10,000 health professionals per year. Other government initiatives to support the industry include: introduction of a special "M" visa for tourists coming to India for medical purposes, uniform pricing for specialty services, strengthening of the supporting medical research institutions/infrastructure, and classification of revenues from foreign patients as "exports" that are eligible to receive export incentives [4].

[137] FT.com, "Medical tourism's popularity on the rise," June 22, 2007
[138] University of Delaware, UDAILY, "Medical tourism growing worldwide," July 25, 2005.
[139] FT.com, "India to launch health institutes to plug skills gap," March 2006
[140] FT.com, "India fosters growing 'medical tourism' sector," July 2003
[141] American Medical Society, "Medical Travel Outside the U.S.," June 2007.

Market growth (India's medical tourism industry is projected to reach USD $2.2 billion by 2012) and government commitment have built confidence and attracted private investors. Foreign private equity investment has been flooding into India in recent years. Warburg Pincus, one of the largest private equity investors in India, and ChrysCapital, a US private equity fund, have together invested over USD $40 million in Max Healthcare. George Soros' Quantum Fund, together with Blue Ridge Capital, purchased USD $33.3 million of shares in Fortis health-care. Fortis, well-known for its founder, the former head of Global drugmaker Ranbaxy, operates 12 hospitals in Northern India and an additional 16 cardiac facilities. Real estate funds appear to be participating in the trend as well with Trinkona also showing interest in investing in Fortis [42].

Singapore

Singapore received 410,000 foreign patients in 2006 with nearly half of them coming from the Middle East [43]. A broad range of treatment is available in Singapore including, cardiology, ophthalmology, and oncology. Public and private hospitals alike have been experiencing significant growth over the past 5 years, with recent growth rates in foreign patients topping 25% per year. The industry has set an ambitious target of attracting 1 million foreign patients by 2012 and generating USD $3 billion in revenue [44].

Singapore Medicine, a multi-agency government initiative is leading the strategic vision and joint marketing of the industry. The industry is also supported by a dedicated health-care services unit within the Singapore Tourism Board.

While private hospitals still receive the majority of foreign patients, public hospitals are increasingly servicing foreigners at unsubsidized rates. Unsubsidized room rates in public hospitals typically run about 10% above the normal room rate.

Singapore has successfully promoted medical achievements and breakthroughs to raise its profile as a world-class healthcare destination in the past decade. The medical system is bolstered by Singapore's culture for high standards and safety. The Health Sciences Authority is the critical regulatory body that monitors medical standards ranging from drug evaluation to medical devices and transfusion medicine.

The Living Donor Liver Transplant programme at Gleneagles attracts 80% of its patients from overseas. Unlike many of its neighbors, Singapore law allows transplants in cases where there is an emotional link between the donor and recipient.

Singapore is also creating a name for itself in stem cell transplants. The cost of treatment for stem cell transplants to treat cancerous tumors ranges from USD $72,000 to USD $90,000 while in the US similar treatment would cost USD $235,000.

142 FT.com, "Growth of private medical care in good health," January 2007
143 University of Delaware, UDAILY, "Medical tourism growing worldwide," July 25, 2005.
144 University of Delaware, UDAILY, "Medical tourism growing worldwide," July 25, 2005. Express Heathcare Management, "Medical tourism boom takes Singapore by storm," July 2005.

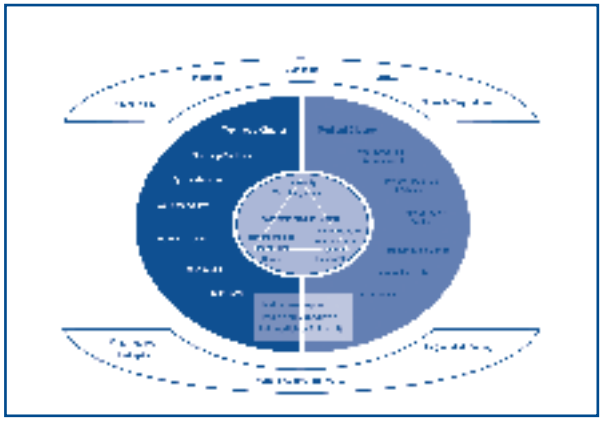
Singapore is also offering services and clinics customized to specific countries such as Japan and Korea. Hospital staff will receive the patients and relatives from the airport, arrange their stay and provide language services as well.

Healthcare services in Singapore are supported by a strong research and development infrastructure that can work with the medical community to stay on the edge of techniques and technology and develop new treatments. Further strengthening the medical cluster is the growing number of leading biopharmaceutical companies including Eli Lilly, Novartis, Merlion, and Viacell.

Finally, Singapore is leveraging its position as a conference hub and hosting numerous medical conferences, symposia, and training seminars.

DUBAI HEALTHCARE CITY

UAE Government plans to double bed capacity of public hospitals to achieve a target of one bed for every 300 people by 2010[1]. Dubai Healthcare City (opening in 2010) will be the largest international medical center between Europe and Southeast Asia and will include a formal branch of Harvard Medical School. The City will offer patients access to world-class, specialist care in a culturally sensitive environment with the convenience of an entire healthcare state-of-the-art facility. The service portfolio will be organized around four comprehensive pillars: direct medical services, wellness services, healthcare supporting services, and hospitality services. The Healthcare City will operate as a free zone with the traditional tax and duty incentives, commercial benefits, business convenience, and complementary facilities.



Source: http://www.dhcc.ae

Middle East Region

Very little specific data is available on the medical tourism industry in the region. Out of the regional benchmark countries (Lebanon, Egypt, Saudi Arabia), Lebanon emerges as a key competitor to Jordan from the compiled indicators. While Lebanon is smaller in overall size of the industry (revenues and employment), total per capita expenditure on health in 2004 topped USD $670 - considerably higher than Saudi Arabia (USD $412) and Egypt ($66). [45] In 2005, there were nearly 3.6 [46] beds per 1,000 population in Lebanon - well above the figures of 2.25 [47] and 2.2 [48] beds per 1,000 population in Saudi Arabia and Egypt respectively. The doctor/patient ratio was also higher in Lebanon reaching 2.36 physicians per 1,000 patients versus only 1 physician per 1,000 patients in both Egypt and Saudi Arabia. In Lebanon, over 70 medical specializations are available, ranging from cosmetic to open-heart surgery; however, Lebanese surgeons are gaining notable success in the cosmetic surgery field. Many of the per capita figures above can be partially explained by Lebanon's much lower population, contributing to both higher ratios of beds and physician per patient and much higher level of spending per head as opposed to both Egypt and Saudi Arabia. (Egypt and Saudi Arabia populations reached 70 and 27 million respectively compared to 4 million in Lebanon).

145 World Health Organization (WHO), 2004
146 Ministry of Health .Lebanon, 2005
147 Ministry of Health. Saudi Arabia, 2004
148 World Development Indicators Data Base, 2003

The private sector plays a much stronger role in Lebanese healthcare than the other benchmark countries. The contribution of the private sector was the highest in Lebanon, reaching an average of 73% of per capita total expenditure within the period 2001-2004. On the other hand, the government was the heaviest investor in healthcare in both Saudi Arabia and Egypt accounting for an average contribution of 77% and 39% respectively within the same period.

Egypt had the highest number of employees working in the health care sector: almost 216,000, [49] Saudi Arabia had148,000 [50] and Lebanon with 14,500. [5] Nearly 70% of Saudi Arabia's medical workforce is Egyptian indicating the capacity and level of Egypt's medical training system. The Saudi government's commitment to providing free healthcare to Saudi citizens and visiting pilgrims each year requires that it bring in non-Saudi medical professionals. The average cost of a routine check-up at a family doctor in Egypt is USD $16, almost half of the cost in Saudi Arabia (USD $33). Yet, the check-up in Egypt accounts for almost 32% of the patient's monthly disposable income as opposed to just 15% in Saudi Arabia.

In the summary table below, Jordan is benchmarked with medical services industries in the region and internationally. Not all countries track and disseminate the same sets of indicators. The blanks in the table are due to these inconsistencies. In most cases, the numbers do not come from the same source - there may also be inconsistencies in definition and data collection. As a result, the benchmark data should be considered directional for comparison purposes only, not precise calculations. In all instances, the number shown is the last available year. Each number is individually sourced from country specific sources. A more extensive benchmarking table and individual sources can be found on the Jordan Competitiveness Observatory website.

Table 6.2 – International Benchmarking Data

	Jordan	Egypt	Lebanon	Saudi	Costa Rica	India	Singapore	Thailand

149 Egyptian Central Agency for Public Mobilization statistics, 2004
150 Ministry of Health, Saudi Arabia, 2002
151 Ministry of Health .Lebanon, 2005

As illustrated in the Table 6.3 below, Jordan is cost competitive in most procedures when compared with average costs in the US or Asia. However, with the exception of joint replacement operations, all Jordan is still priced above India and Thailand. With increasing patient access to medical and economic information, worldwide prices will start to align more closely with the level of care.

Table 6.3 – Average Cost of Medical Procedures by Country

Procedure	USA	India	Thailand	Singapore	Jordan
Heart Bypass	130,000	10,000	11,000	18,500	15,000
Heart Valve Replacement	160,000	9,000	13,000	12,500	11,000
Angioplasty	57,000	11,000	13,000	13,000	N/A
Hip Replacement	43,000	9,000	12,000	12,000	6,000
Hysterectomy	20,000	3,000	4,500	6,000	N/A
Knee Replacement	40,000	8,500	10,000	13,000	6,000
Spinal Fusion	62,000	5,600	7,000	6,000	15,000

Plastic surgery, not noted in the table above, may be a new growth segment for Jordan. While Jordan ranked just 35 out of 46 countries in the 2003 International Statistics for Aesthetic Plastic Surgery Procedures (ISAPS), regionally, Jordan was ranked higher than Egypt, Saudi Arabia, Israel, Lebanon and the United Arab Emirates. Specifically, one opportunity, according to industry leaders, is full-mouth implantation of teeth. This procedure can cost just USD $20,000 in Jordan compared to USD $100,000 in the United States.

5. State of Competitiveness

The following is a review of the state of competitiveness of the Jordanian medical tourism industry identifying the strengths of and challenges to the future of the industry according to sector experts:

Strengths

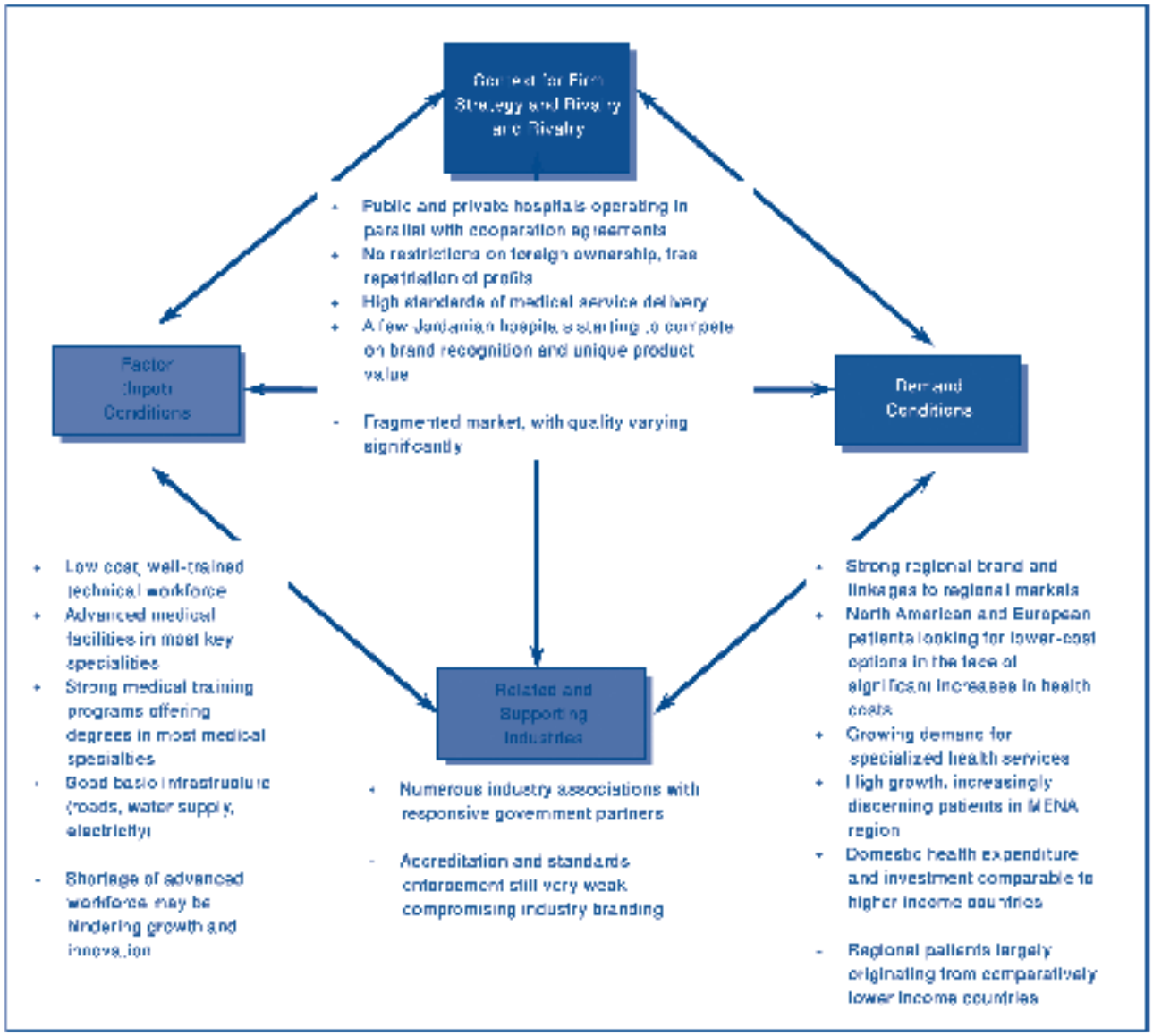
- Incoming Arab patients are privy to some of the world's most modern medical treatments available, and are able to recouper ate in the uniquely pleasant weather. Tourism and leisurly activities make it possible for patients to bring their families who in turn spend more money in Jordan.
- The large number of qualified and well-respected doctors distinguishes Jordan as a destination for medical tourism. Specialists represent as many as 40% of the health care practicioners registered with the Jordan Medical Association. Relatively high levels of financial resources ensure the availabiltity of an advanced physical infrastructure and cutting-edge technology.
- A top-rated higher education system trains a dedicated, experienced workforce to serve as physicians, nurses and technicians.
- Formal linkages and international partnerships have been forged with several western hospitals systems, including the Mayo Clinic, the Cleaveland Medical Center and the Guy and St. Thomas Hospital.

Current Challenges

In order to recommend an action plan for a system-wide overhaul, a formal scientific evaluation of the health care industry would need to be performed. Such an evaluation is beyond the scope of this report. Nevertheless, an economic evaluation can be summarized thusly:

- More must be done to attract patients from new markets and demand categories in order to respond to higher per capita income countries such as the Gulf States. It is further recommended that Jordan court patients from more traditional neighboring markets like Yemen, Libya, Iraq and Sudan in order to avoid an excess of supply as is currently the case in private hospitals.
- Jordanian hospitals still lack a unified health care strategy in order to link their services with those provided in other locations and become hubs of specialization acoss the country.
- The sector is characterized by weak coordination among public and private hospitals and service providers, probably because the sector lacks a comprehensive marketing and strategy that serves the overall sector and promotes Jordan as a regional medical center.
- There is no independent body for promoting medical sector performance and trends or promoting the sector's services and features abroad. Any current promotion efforts are plagued by fragmentation.
- Industry supporting activities such as the Association of Private Hospitals, tour agencies, and the Office of Arab Patients that is located at the Queen Alia Airport are insufficient at best and ineffectual at worst.
- The Medical Tourism industry lacks a dynamic, and reliable data system for tracking the patients. This impedes the effective evaluation of sector trends and performance.
- Jordanian medical tourism ought to expand its services to include new areas of medicine, as well as cosmetic surgeries to take advantage of regional and international trends.

Figure 6.16 – Porter Diamond for the Medical Tourism Sector



5.1 Demand Conditions

The Government of Jordan's commitment to providing high quality healthcare services to its people has built a strong base of demand. On a per capita basis, Jordanians spend more on healthcare expenditures per year than their regional neighbors. On average, a Jordanian spends a total of JD 41/year as out of pocket money on hospital care and services (JD 33 on outpatient visits and 8 JD on hospital care). [52]

However, on an absolute scale, Jordan is small compared to regional and international competitors. The total number of admitted patients in 2005 was just 699,466. [53] Overall hospital visits in 2005 reached approximately 2.5 million in MOH hospitals and around 5 million in total across the public, private, and university hospitals. With just 5 million hospital visits per year, industry leaders must rely on domestic, regional, and international feedback when considering healthcare product and service development. In the industry survey, over 60% of the respondents confirmed that they look regionally and internationally to understand trends and develop new products.

152 7 Jordan National Health Accounts, 2000
153 Ministry Of Health, Annual Statistics Book, 2005

While the public sector administers most hospital visits, the demand for surgical operations is directed at private hospitals. The total number of surgical operations (excluding obstetrics) in 2005 was 260,434, 42.6% of the operations were performed in the private sector followed by 31.7% conducted by the MOH. The majority of Obstetrics operations, estimated at 147,481 for 2005, was handled by the Ministry of Health, 48%, and 32.9% by the private sector [54].

Regional Demand

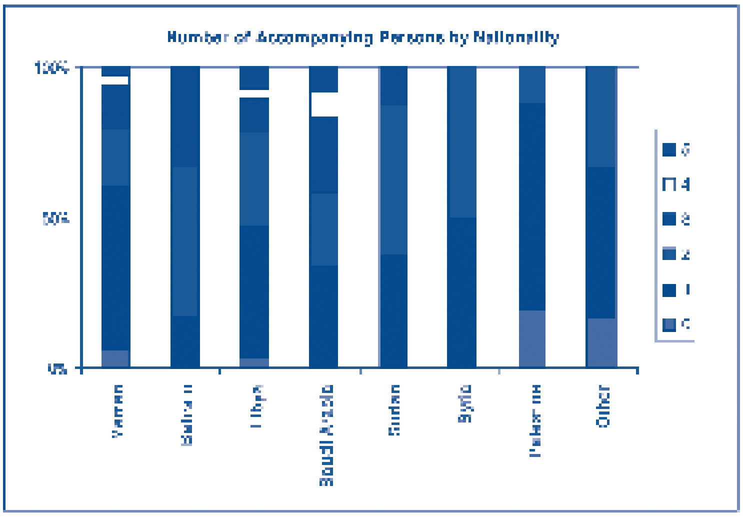
As highlighted earlier, the vast majority of foreign patients originate in the Middle East. There is no one authoritative source for the number and origin of incoming patients; the main body for this data type is the Medical Tourism Directorate/MOH, however, the MOH faces difficulties in updating those figures regularly and systemically. Despite the lack of consistent data, it is well understood that foreign demand for Jordanian medical services is generated by word-of-mouth. Jordan is well-recognized in the region for its high-quality, reasonably priced medical services. As a result, it is attracting the middle-market regional patients that do not have access to high quality medical services in their home countries and are able to travel abroad to Jordan. Jordan's Ministry of Health has signed agreements and protocols with a number of health ministries in regional countries, including Sudan and Yemen, in order to receive patients from these countries. Furthermore, the Ministry of Health has decided to allocate a health attaché at the Jordan Embassy in Yemen, with the possibility of this being extended for the other origin countries of incoming patients. Moerover, some of the private hospitals made individual efforts to create and strengthen their linkages with the regional countries and promote their services in those countries. These market channels may explain the steady flow of patients from specific regional countries with very little growth or decline in arrivals over the past 5 years.

Across specialties, the most demanded services are: Cardiology, Neurology, Orthopedic, Ophthalmology, Cancer cases, and Kidney Cases. Prices are set by the MOH with the input and agreement of the Jordan Medical Association and the private sector. For example the cost for an open heart surgery has been set at USD $11,000, Orthopedic cases range between USD $4,000 to USD $6,000; Ophthalmologist cases USD $4,000, Neurology and Neurosurgery between USD $7,000 to $20,000; Kidney removal USD $1,500, Kidney implantation USD $15,000 to USD $20,000 [55].

Most of the patients that come to Jordan for treatment bring their families with them. A study by the Jordan Competitiveness Team in 2004 revealed which nationalities are arriving in Jordan with family members. The chart below presents the number of family members that accompany the patients according to the MOPIC survey [56].

[154] Ministry Of Health, Annual Statistics Book, 2005
[155] Pricing list prepred by Ministry of Health, 2005,
[156] Medical Tourism Study, Jordan Competitiveness Team, Ministry of Planning and International Cooperation, 2004

Figure 6.17 – Number of family members that accompany the patients according to the MOPIC survey.



In 2004, patients from Bahrain, Saudi Arabia, and Sudan were most likely to arrive with more than one person accompanying them, while patients from Saudi Arabia, Libya and Yemen were most likely to arrive with more than 3 accompanying persons. Continuously understanding the demand segmentation of arrivals is critical to targeting promotional efforts and understanding the needs of the patients and their families.

5.2 Factor Conditions

Overall, Jordan is considered to have an advanced healthcare system with highly trained professionals and up-to-date equipment. Among industry leaders, 63% characterized Jordan's physical health infrastructure supporting the medical tourism industry as world-class or above average. According to respondents, the costs for conducting business in medical tourism in Jordan are on par with, or slightly below, the world average, rising only moderately due mostly to increasing input and materials costs.

The number of hospital beds per 1000 population varies from 25 in Amman to 8 in Ajlun, Mafraq, and Jerash, with most private hospitals located in Amman. Jordan has a relatively long history of private hospitals. The first private hospital was established in 1927 followed by the second in 1945. Today, private hospitals dominate the market accounting for 53% of the number of hospitals and 34% of total available beds in the country [57].

The total number of hospitals in Jordan has increased considerably over recent years, growing from 91 with 8,982 beds in 2002 to reach 101 with 11,049 beds [58] by 2006. The table below shows the breakdown of the number of hospitals and beds per sector for 2006.

Table 6.5 - Hospitals and beds per the health care providers, 2006 [59]

SECTOR	NO. OF HOSPITALS	BEDS	
		No.	%
Ministry of Health	30	4,285	38.83
Royal Medical Services	11	2,118	[illegible]
King Abdullah University Hospital	1	[illegible]	[illegible]
Jordan University Hospital	1	531	4.80
Private Sector	58	3,707	33.60
Total	101	11,049	100.00

157 Medical Tourism Study, Jordan Competitiveness Team, Ministry of Planning and International Cooperation, 2004
158 Ministry Of Health, Annual Statistics Book, 2006
159 Ministry Of Health, Annual Statistics Book, 2006

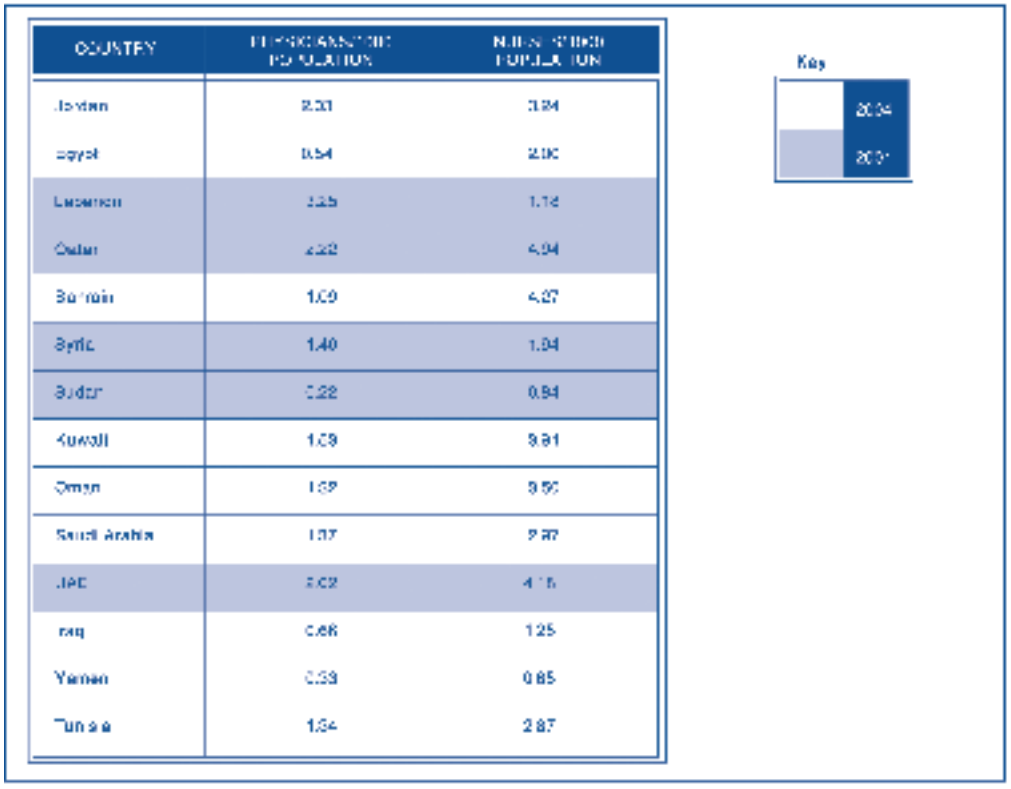
Health Sector Personnel

Highly trained doctors are one of Jordan's key strengths. With 17,569 employed doctors in 2006, Jordan has a ratio of one doctor for every 408 Jordanians, and ranks third among countries in the region for availability of doctors, behind only Lebanon and Qatar. Nearly 75% of the survey respondents indicated that highly skilled doctors are easy or somewhat easy to find and hire in Jordan. In fact, there are over 2,000 more doctors registered than employed in Jordan [60], indicating that numerous Jordanian doctors are working outside of Jordan.

While the supply of doctors is a clear strength for Jordan, the supply of nurses is a clear constraint. In 2006, there was only 1 nurse (including nurse assistants, legal nurses, and midwives) for every 283 persons, slightly lower than the regional average [6]. Echoing these numbers, over 60% of survey respondents indicated that the availability of trained nurses on the labor market is a constraint. According to the 2005 Jordan Vision 2020 Phase II study, there may be a number of causes for the low levels of trained nurses in Jordan: 1) comparatively low wages in the nursing profession, 2) limited certification systems and continuous education and training, and 3) a cultural perception that the nursing profession is an unfavorable career. As a result of the first cause, those Jordanians that do pursue nursing careers are often attracted to other regional and international markets, mainly Saudi Arabia, UAE, Qatar, and Oman.

Brain drain, the migration of skilled and experienced technical professionals to other countries, among nurses, and doctors to a lesser extent, is significantly affecting the industry. Among respondents, 81% of industry leaders indicated that brain drain is "a significant issue" for their organization and "severly compromises" their organization's ability to train and retain the best professionals.

Table 6.8 - Human Resources for the health regionally, years 2001 and 2004 (according to data availability).



Source: WHO, 2006

[160] Jordan Medical Association, 2006
[161] Ministry Of Health, Annual Statistics Book, 2006

According to the Ministry of Health records, there is also a deficit in personnel with qualifications and skills in the community medicine area and related and supporting areas, such as health policy and management, epidemiology, education, environment, and health economics. In this regard, efforts are being considered by the public sector in collaboration with WHO, USAID, and the World Bank, and a one-year diploma course in community medicine is ongoing in the MoH in collaboration with the WHO.

Training Institutions

The supply of Jordan's medical professionals is supported by a base of training and research institutions. When surveyed about the 7 main medical and nursing schools in Jordan, industry leaders indicated that only 2 institutions deliver the level of training for doctors and nurses that provides the necessary skills set for the industry. For the other 5 institutions, less than 50% of respondents were able to claim that the institution currently provides employees with the right skill set. Despite the broad base of training institutions in Jordan, there appears to be a thin layer of premiere professionals. This leaves Jordan significantly at risk to increased labor mobility and the brain drain trend.

5.3 Context for Strategy and Rivalry

The medical tourism industry in Jordan consists of a number of players, hospitals and other service providers, which compete on a mix of price, specialization, and quality. The majority (63%) of the industry believes that competition is based on the quality and price of the service rather than just personal networks (25%). Within the region, Jordan competes on a mix of all 3 service offer dimensions. Patients from the Middle East and North Africa come to Jordan for its affordable price and its reputation for quality service. Based on the arrivals data, Jordan is attracting very few international patients from outside the region, so it is difficult to determine Jordan's competitive position internationally. The view from within the industry reflects a closed perspective about Jordan's competition. Over 70% of respondents indicated that their direct competitors are based only in Jordan. Only 5% indicated that their direct competitors are global players.

Illustrating its ability to collaborate, the industry (public and private sector) signed a new agreement in April of 2007 to take advantage of private hospitals' excess capacity when needed. This agreement enables the private hospitals to receive patients from the public sector that are paid for under the public medical insurance. This agreement comes after a process of "contracting-out" the services by the MOH to the private sector on a "Fee per Service" basis. At the time of signature, this agreement only covered the 1st class health insurance category, but is planned to be extended to 2nd class insurance category by the end of this year 2007.

Insurance

The treatment costs comprise 2 main types: the services price and the professionals' fees. The pricing of the services is set by the Ministry of Health for all healthcare services, including the RMS. Jordan Medical Association lists professional fees to be generated by the physicians for each provided service, this list is then approved by the MOH. The MOH and private sector jointly prepare, and the Medical Tourism Directorate publishes a list of prices for treatment corresponding to certain diseases. These prices are the same for both the public and the private sector. While this price regulation may protect patients in the short run, it risks serving as a price cap and providing a disincentive to hospitals to increase quality.

Licensing and accreditation of hospitals and healthcare service providers is one of the most pressing issues facing the industry. When asked about the licensing of medical service providers in Jordan, only 24% of respondents in the survey indicated that licensing exists, is correctly structured and enforced. 76% responded that it

exists but is poorly structured or not enforced, or simply doesn't exist at all. For the accreditation of hospitals just 17% indicated that it exists, is correctly structured and enforced at the level of international standards. 83% responded that it exists but is either not enforced or does not reflect international standards, or simply does not exist. Efforts are underway to address the constraints on licensing and accreditation, but the responses from the industry indicate that much is still remaining to be done.

There is recognition in Jordan of the importance of coordination and collaboration on the part of the many different parts of the industry for the promotion of the interest of the overall sector. With this common interest in mind, a comprehensive National Strategy for this industry was prepared in 2004 by a group of the experts in the health cluster in collaboration with professionals from other related industries. [62] Yet, when asked in the survey about the current state of the industry strategy, only 5% of the industry responded that the strategy exists, is focused on the right issues, and is being implemented. Nearly half (48%) acknowledge that the strategy exists and is focused on the key issues, but feel nothing is happening. One-fourth claims that the strategy is focused on the wrong things, and the other 24% are not even aware that it exists. Similar results emerge when the industry was asked to comment on the industries' common marketing strategy. Over half, 53%, are happy with the strategy but claim that nothing is happening.

The strategy, as it exists, is based on 4 pillars, namely: 1) Laws and Regulations, 2) Supporting Industries, 3) Healthcare services providers, and 4) Marketing. The first 3 pillars are focused on the goal of improving and enhancing the overall services of the health sector. Therefore, the objectives of these 3 pillars are:

- Creating a regulatory and legal environment that enables the sector to enhance its efficiency and improve its competitiveness
- Enhance the effectiveness of supporting activities in this sector
- Ensure medical services provided in Jordan meet global medical standards
- Increase investment in human resources

Furthermore, these pillars aim at encouraging providers to raise the quality of services to meet international standards and improve the strength of those related and supporting industries which have a direct/indirect influence on attracting patients. The 4th pillar, marketing, looks to boost and streamline the current fragmented marketing efforts of individual players.
While this strategy was adopted in 2004, an action plan is still pending, and there has yet to be any activity.

5.4 Related and Supporting Industries

As described in the above sections, the medical tourism industry includes many involved parties as supporting industries. According to the National Strategy for Medical Tourism and its implementation recommendations, following each section is a brief description for the anticipated role to be considered by each party.

The Medical Tourism Directorate, a public sector organization, is involved in regulating this sector, receiving the Arab patients through its office in Queen Alia Airport, "Arab Patients Office", and receiving any complaints and suggestions for the patients. The Arab Patients Office aims mainly to facilitate the movements properly.

[162] The team included MOH/Medical Tourism Directorate, Jordan Medical Association, doctors of the private sector, Private Hospitals Association, Royal Jordanian Airlines, Jordan Tourism Board, Ministry of Interior, Ministry of Foreign Affairs, and Ministry of Planning and International Cooperation.

Additionally, this Directorate holds 2 vital responsibilities for the sector: the Directorate is responsible for collecting and sorting the data available in this sector, these data are updated and published annually for all stakeholders in the private and public; secondly, it is responsible for promoting and marketing Jordan as a medical center in the region.

Medical Service Providers

- Furnish the sector with an information referral system among all the health organizations, in order to evaluate the needs and demands of the sector, and to fill any risen gaps within the sector specializations and services.
- Encourage the doctors with the demanded specializations to develop their expertise through workshops and training programs, and to facilitate their missions and responsibilities.
- Activating the role of the Jordanian Medical Council in the life-long learning.
- Adopt and implement the appropriate admission procedures and mechanisms within the hospitals in order to facilitate the admission/releasing procedures for the patients and efficiently.
- Implementation of the suitable and crucial investment in the human resources of this health sector, this may be satisfied through the continuous learning process, workshops, and the training programs.
- Create the suitable mechanisms for the quality assurance system, especially for the labs, in order to deliver the best quality required.
- Develop an incentives system for the sector personnel, especially for the nursing staff.

Royal Jordanian (RJ) Airlines

- Offering special discounts and preferable rates for the incoming patients and their families, through issuing "Patient Tickets", with unlimited duration tickets.
- Investigating the possibilities to consider new airlines trips to the destinations with the high number of patients, or to increase the number of flights to those countries.
- Matching the new potential markets that targeted by the health sector with including those countries in starting new airlines and flights.; particularly those in Africa such as Chad, Nigeria, Djibouti, Ethiopia, Niger, Ghana, and Somalia.
- Employing the external RJ offices that are available in the different countries to promote Jordan's medical services; through special services and publications.

Ministry of Foreign Affairs

- Facilitating the process of obtaining visa, as well as shortening the time of the corresponding procedures for the patients e.g. 48 hours. Also, check the possibilities to issue those visas in the airport upon the patients' arrival. This could be sufficient through a committee comprised of representatives from the Ministries of Interior, Health, and Tourism, in addition to the General Intelligence Department.

The Embassies and Missions Abroad

- Incorporating a medical attaché in the embassy or mission staff, especially in countries with high de mand for Jordanian medical services (Yemen, Sudan, Libya, Saudi Arabia, Bahrain);
- Marketing the provided services by the medical sector in Jordan through specialized booklets and brochures.

The Private Hospitals Association

- Strengthen the collaborating with the Jordan Medical Association in issuing such specialized publications, booklets, and brochures that demonstrate the high and advanced capabilities of the Jordanian medical sec-

tor. Working to make those publications available at all missions, embassies, RJ offices, Jordan Tourism Board abroad.

- Induce the hospitals who are members in the association to conduct exhibitions and medical conferences outside Jordan.
- Raising fund from possible donors and their programs, to support the institutionalizing the framework of the association, organizing the medical exhibitions, and producing the adequate promotional publications and materials.

The Arab Patients Office

In 1999, the Arab Patients Office was established in Queen Alia Airport to facilitate the arrival of incoming patients and serve as a liaison to provide objective information on the various service providers as a free service. The office also provides the direct transportation to the hospital of the patient's choice. The office was also set up to increase coordination among service providers and collect valuable aggregate industry level information on the arrivals of foreign patients including basic statistics as well as levels of satisfaction with services received and overall experience in Jordan. When asked in the survey, only 13% indicated that the Arab Patients Office is providing high quality, efficient services that represent both public and private hospitals. 43% indicated that the office provides low quality, inefficient services, and 45% indicate that the office provides services that represent only certain private hospitals.

Ministry of Health

- Developing the mechanisms for selecting the hospitals for directing the incoming patients through the agreements and medical protocols, these mechanisms have to be built upon certain criteria such as the level of excellence, nature of medi cal specialization, size of hospital, and the medical condition of the patient.
- Activating significantly the role of the High Health Council (HHC), to play its role in regulating the sector and enforcing policies formulating and enhancement.

Donors Programs for the Private Sector

- Emphasize the technical aspects that need to be developed in order to direct the available fund for their enhancement, particularly in the areas of promoting and marketing its services abroad.

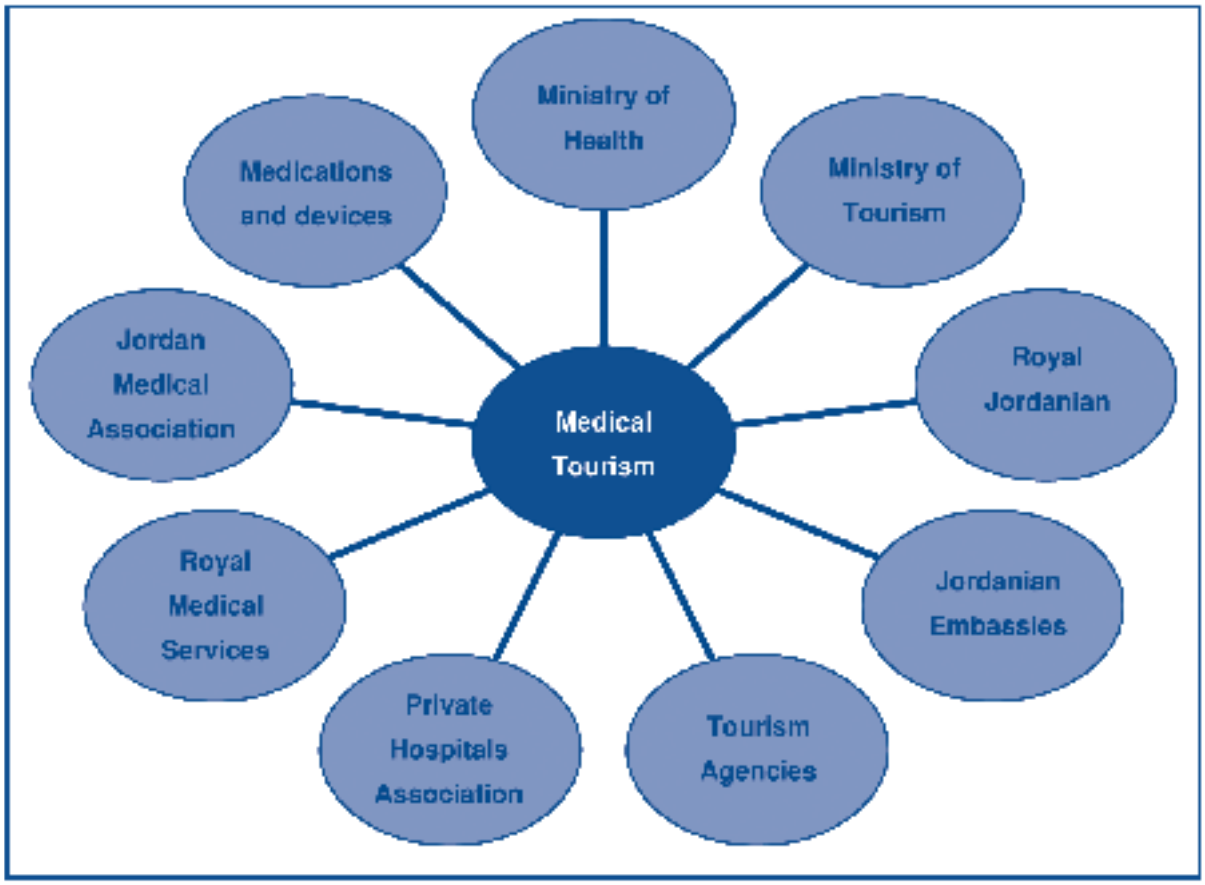
Hotel Apartments

- Licensing the hotel apartments by the Ministry of Tourism and Antiquities.
- Regulating the prices of the services provided by the hotel apartments, as well as monitoring the pro vided quality by the Ministry of Tourism and Antiquities.

Other Related and Supporting Industries

Similar to other medical tourism destinations, Jordan benefits from a range of complementary medical and hospitality industries including a vibrant traditional tourism industry and a strong pharmaceuticals industry. The chart illustrates the main parties directly and indirectly involved in the medical tourism industry, namely, the Ministry of Health and its directorates, Ministry of Tourism, Royal Jordanian airlines, Tourism Agencies, the Private Hospitals Association, and the medications and devices industry.

Figure 6.18 - Medical Tourism Web



The regional and international benchmarking (India, Singapore, Dubai) highlight a trend among medical tourism industries to ensure that hospitals attracting foreign patients are supported by research institutions that can continually input the latest ideas and techniques in the medical field. When asked to characterize research institutions supporting the medical field, only 4% responded that such institutions exist and directly support the competitiveness of the industry. 60% responded that the institutions exist but do not directly support the competitiveness of the industry, and 36% responded that research institutions supporting the industry do not exist.

5.5 Regulations and Role of the Government

Overall, there appear to be significant concerns among the industry in the role that the government is playing in regulating the medical tourism industry. 41% of industry leaders polled indicated that inefficient government bureaucracy was either problematic (17%) or extremely problematic (24%). 44% indicated that policy instability was problematic (20%) or extremely problematic (24%) for the performance of the industry. Between 20% and 30% of respondents indicated that tax rates and regulations are extremely problematic. Labor regulations also appears to be an issue that is plaguing the industry with just 13% indicating that it is not an issue that is problematic for them.

According to the National Strategy, the government's role should include:

- Reviewing and re-considering the existing regulations of the hospital, and updating them according to the recent medical progress.
- Devising medical malpractice laws, and a medical malpractice insurance system;
- Empowering the Private Hospitals Association through regulations, in order to have an effective participation in enhancing the overall sector and monitoring the performance of the private hospitals.
- Exempting the hospitals' income from the foreign patients, as well as the doctors from the tax. Furthermore, emphasize and ensuring this exemption for the fees and expenses of the medical conferences and staff as well.
- Activating the laws that enforce service providers to disclose the information to the patients pertaining to his/her medical case, and any complications that might result from surgeries.

6. Constraints to Growth

A comprehensive study was conducted by the Arab Bank Center for Scientific Research in 2002. This study was concerned mainly with assessing the private hospitals sector in Jordan, technically and financially. The survey also included patients' satisfaction for the provided services. Jordan's main strengths according to this study are the availability of advanced and up-to-date technology and skilled and trained personnel. However, this sector needs an effective role for the Private Hospitals Association, and the sector lacks the coordination and linkages among the private hospitals in order to streamline their promotin efforts. This sector also has weak financial systems, shortage of nurses, overlapping in services and resources offered, and lack of skilled management and administrative systems.

Many studies have identified the challenges faced by the medical tourism industry in Jordan, they include:

1) Jordan suffers from econmic crises precipitated by regional wars in Iraq as well as the ongoing Palestinian conflict. Rising oil prices and high growth rates further contribute to the rising cost of health care. These factors lead to the deterioration in living conditions and a decline in per capita income.
2) The new income tax laws will increase the tax burden on private hospitals by 5% to 20% according to leaders in the private health care sector which may impede the development of future private organizations.
3) The competitiveness of the Jordanian medical tourism industry is threatened by an insufficient monitoring and regulation system for the private hospitals, especially in respect to foreign patients.

The medical tourism sector lacks the necessary coordination among industry stakeholders. Improving this coordination will have the potential to enhance the overall performance of the medical tourism sector; and developing the proper partnership between the public and private sectors as well as the regulating bodies and the support services in this sector will be reflected positively on the overall performance.

- Major health indicators must be measured and tracked for improved client satisfaction, the client-provider relationship, and the equity of patients. Clients are generally satisfied with the range of provided services, but they do not have the same attitude regarding the waiting time, consulting time, privacy while receiving the care, availability of medicine, quality of laboratory services, and other services types.
- It is simply not practical to equip every medical facility with a full range of services such as laboratories and radiology instruments, therefore it is incumbent upon the GoJ and the industry leaders to design and implement a well-organized referral system that distributes and manages the hospitals and health centers,

and the ultilization of the equipment.

- The healthcare system suffers from the absence of quality control and auditing measures to prevent practicioners from writing unnecessary prescriptions and ordering extraneous tests.
- Quality control and assessment must also take into account the negative impact on patient care due to the high turnover rate of medical staff in remote areas.
- Patient comfort, especially privacy, should be considered when assessing the space limitations of some health centers; crowded care facilities adversely affect the confidence of patients.
- Capacity building and development, as well as education, are necessary tools for enhancing the qualifications and expertise of the healthcare sector staff. Moreover, a re-licensing system for physicians, nurses and technical staff will maintain sector excellence in the region.

Higher Education

HIGHER EDUCATION

1. HISTORY AND CONTEXT

The higher education sector serves 3 major purposes in the Jordanian economy in addition to the traditional role of preparing qualified citizens for employment: 1) it attracts foreign students that bring with them valuable foreign currency, 2) it performs research and development initiatives to create new knowledge and technology, and 3) it serves Jordan's industries by preparing qualified technical and management professionals. The assessment considers the multi-dimensional economic role of higher education.

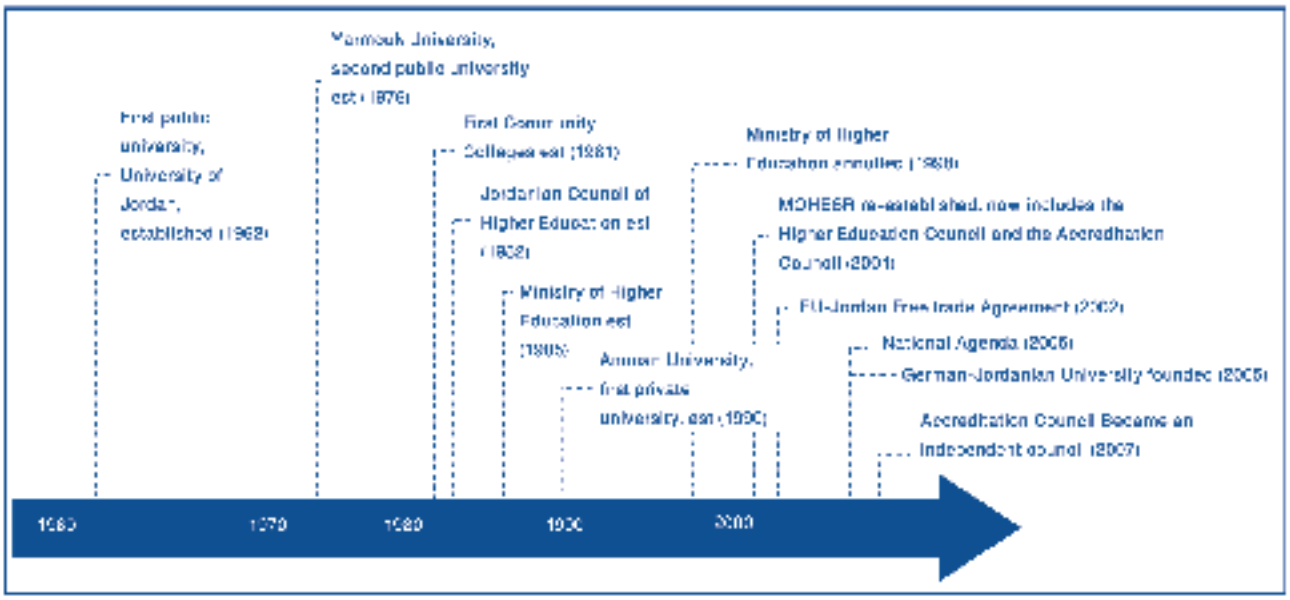
Higher education has not historically contributed significantly to the Jordanian economy. However, Jordan has seen a growth in recent years of the number of international students coming to Jordan to study. These international students are bringing with them foreign currency to be spent in Jordan and taking with them a network in Jordan that can be used for future business endeavors. In addition, higher education is emerging as a domestic necessity given a young and growing population in order to build a skilled workforce that will be regionally and globally competitive.

KEY FIGURES:

- **26 universities: 10 public, 16 private (2006)**
- **233,916 students in higher education, 2006**
- **Enrollment increased from 17.9% in 2001 to 39% in 2006**
- **(23053) international students enrolled spent 221,828,944.80 in 2006 (JD)**
- **The sector employed 8,793 academic staff in 2006**

The level of competitiveness of the higher education sector has significant economic implications for the state of the economy as a whole. Without skilled labor (a product of the higher education sector), any business or industry would collapse. The sector provides thousands of jobs for well-educated Jordanians. Moreover, the the growing number of international students bring millions of dollars into the Jordanian economy every year. Additionally, through efforts in Research and Development (R&D), the sector contributes to the overall knowledge available in Jordan to private industry as well as to the public sector, improving Jordan's overall competitiveness.

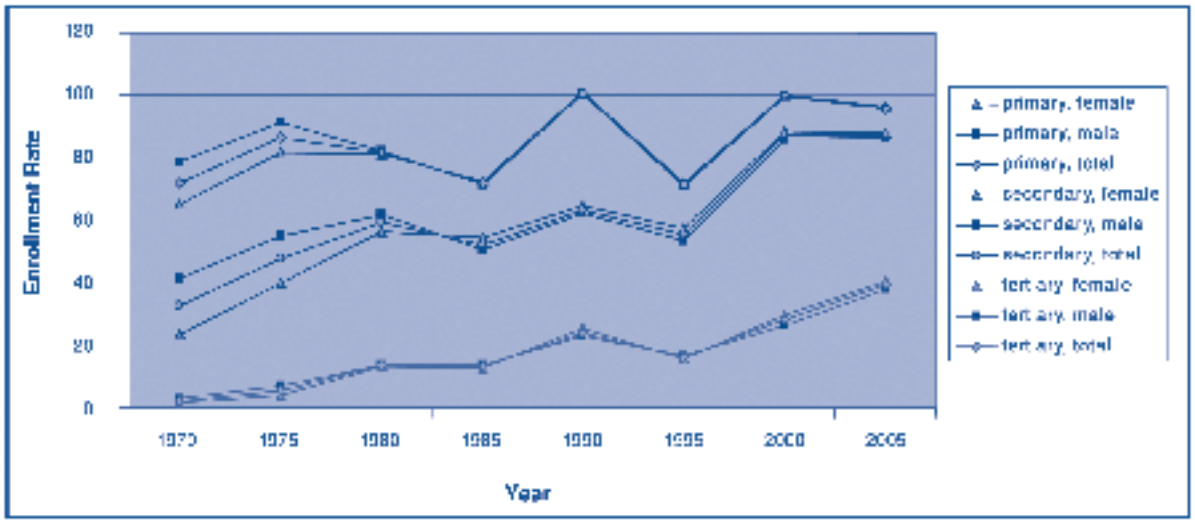
Figure 7.1 - Timeline for the Jordan Higher Education Sector



Higher education in Jordan began half a century ago with the founding of teachers' colleges which led to the endowment of the first public university, the University of Jordan, in 1962. Yet it was another 14 years before a second one, Yarmouk University, was established. The Jordanian Council of Higher Education was established in 1982 and was absorbed into a ministry 3 years later. The first private Jordanian University, Amman University, was founded in 1990. Currently, there are 10 public and 16 private universities in addition to numerous community colleges.

Higher education did not begin to emerge as a significant economic sector until the beginning of the last decade but since then it has experienced extraordinary growth, increasing from 23% gross enrollment in 1991 to 39% in 2006. [63] This dramatic increase is largely explained by demographic trends (a disproportionately young population) and expansion of the industry, notably the introduction of private higher education institutions.

Figure 7.2 – Gross Enrollment Rates



Source: World Bank Edstats Data Query

[163] World Bank, SIMA database, http://sima-ext.worldbank.org/query/.

It was not until 1990 that secondary enrollments surpassed 60%. Yet today, with secondary enrollment at 87.4% and improved gender parity in education, coupled with an overwhelmingly young population (38% under 14), [64] will ensure the domestic demand for higher education in Jordan rises exponentially in the coming years. The urgency of developing a vibrant higher education sector to meet the needs of students and industry alike is further compounded by Jordan's lack of natural resources and subsequent reliance on human capital to remain competitive.

In addition to domestic demand, Jordan has excellent opportunity to position itself to serve education needs of internationally mobile students. The number of international students in Jordan has risen steadily over the last several years increasing by over 67% in the last 5 years (see table below). Jordan has several advantages in this market. Its central location in the heart of the Middle East is a logistical asset. Moreover, Jordan enjoys a relatively stable socio-political climate compared to its neighbors: Iraq, Syria, Lebanon, Saudi Arabia and Palestine. It offers a more 'genuine' experience than the Gulf states, whose relatively recent statehood, excessive commercialization and Arab-minority populations give them a less traditional feel. Moreover, Jordan can potentially position itself as an alternative destination to Cairo. Cairo is a conjested, polluted and frenetic city, and there could be a significant portion of students who would prefer to study in a more traditional and less urban environment.

Table 7.1 - Number of foreign students (undergraduate, graduate and community colleges)

2001	2002	2003	2004	2005	2006
14,599	15,352	18,036	19,965	22,409	24,487

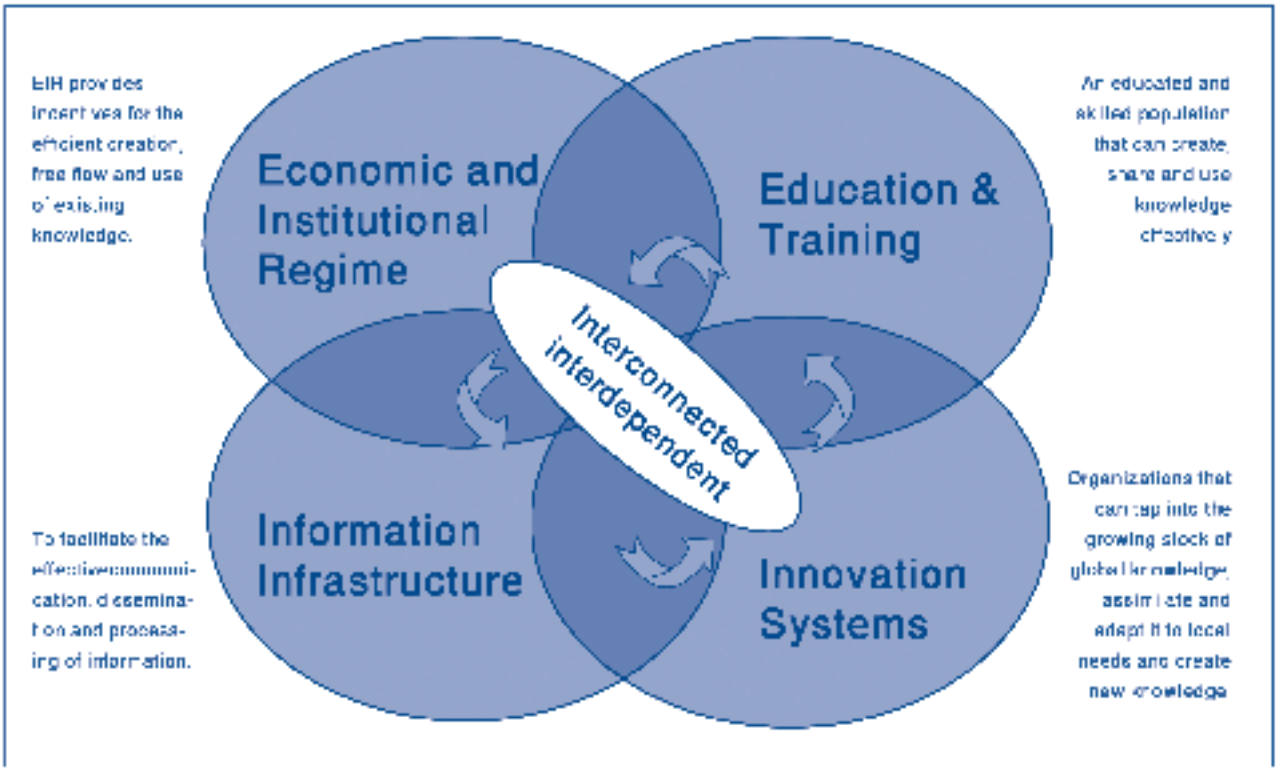
Data Source Ministry of Higher Education- 2001 / 2002 / 2003 / 2004 / 2005 / 2006

The sector is organized through the Ministry of Higher Education and Scientific Research (MoHESR) and much work has been done to develop strategies for the future. Most strategies emphasize the need for higher quality teachers and curricula, standardized quality controls, improved governance and greater cooperation between academia and industry.

[164] WB - Country Brief: Jordan, http://go.worldbank.org/KQ035DBYA0.

2. Regional and International Market Trends

Figure 7.3 - Four Pillars of a Knowledge Economy



Jordan must operate in an increasingly globalized and competitive world that requires investment in human capital and an emphasis on developing a knowledge economy, or "an economy where knowledge is the main engine of economic growth," [65] in order to enhance competitiveness. Globalization brings lower transportation and communication costs along with increased access to information and ever-stronger regional integration. Yet trade liberalization and the subsequent larger global market lead to increased competition. To remain competitive, an economy must be able to constantly innovate, which in turn relies on a strong knowledge economy with enough information, efficiency and quality to satisfy the demanding global consumer. Adaptability of the economy to new technological and organizational advances and its ability to respond quickly to evolving opportunities and threats require quality, skills and flexibility of the labor force. [66] As the graphic above illustrates, a knowledge economy [67] depends on the economic and institutional regime, information infrastructure, innovation and education. Societies across the world are increasingly aware that higher education has a significant role to play not only in the education pillar, but in the other pillars as well; a dynamic higher education sector can be a driver of innovation through research and development, contribute to the information infrastructure through libraries and the media and influence institutional change through effective partnerships with the public sector. The growing emphasis on the importance of creating a knowledge economy is causing governments to look to the higher education sector for leadership and support in equipping the population with skills and the ability to use knowledge effectively: a critical step towards improving the competitiveness of the entire economy.

[165] Chen and Dahlman, 2006 http://siteresources.worldbank.org/WBI/Resources/The_Knowledge_Economy-FINAL.pdf
[166] Developing Jordan's Competitiveness in Higher Education for Building a Knowledge Economy in the MENA Region, PPT by Carl J. Dahlman prepared for Higher Education Development Forum, Feb. 10-12, 2007.
[167] http://go.worldbank.org/5WOSIRFA70, graphic adapted from Dahlman's HEDP presentation

Higher education institutions must not only collaborate closely with the public sector, but equally important are partnerships with the private sector. Currently, the main challenge for the sector is to make it responsive to the needs of the market to ensure that students graduate prepared to enter a variety of industries with the skills needed by competitive firms in these industries, to constantly upgrade their knowledge as technology improves and to pursue a course of lifelong learning.

Consumer Trends

In addition to the greater collaboration with the public and private sectors, there are other important global trends in the higher education sector. Students are reaching ever-higher levels of education as the corresponding market demand grows. Moreover, the increasingly diverse demand for skills and training has brought about the widespread privatization of the sector. Higher education institutions are also incorporating new IT in their curricula, in how they disseminate knowledge and in groundbreaking research and development projects. They are also diversifying to provide certifications, lifelong learning, and various vehicles for learning. Finally, perhaps the most notable trend in the global higher education market is internationalization, with international flows of students rising quickly, and particularly notable growth in the number of Chinese students.

1. Educational Attainment

Globally, more than 132 million students are enrolled in higher education, up from 68 million in 1991 [68], with the private higher education market worth an estimated USD $400 billion per year (out of a USD $2.5 trillion global education market). [69] It is natural that demand for higher education would increase with global population growth and increased enrollment levels in primary and secondary education throughout the developing world. Consequently, the average number of years of tertiary education globally has increased from 0.7 years in 1991 to 1.1 years in 2004. [70] Arab sates came in only slightly behind the global average with a growth of 0.6 years to 1.0 years in the same period. With students staying in school for longer, the demand for ISCED 6 [7] level programs is increasing.

2. Privatization and Diversification

Higher education institutions are also changing rapidly to accommodate the ever-evolving demands of global consumers. Part of the response to the diverse demand is the privatization of higher education. Although most prevalent in Latin American and East Asian countries, privatization is increasingly common across the globe. [72] Middle-income countries have a relatively high share of enrolments in private tertiary institutions compared to OECD countries, however, governments rarely contribute to education costs of students enrolled in private institutions. [73] This suggests a need for more diverse financing mechanisms.

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168 UNESCO Institute for Statistics, Global Education Digest 2006: Comparing Education Statistics Across the World, p. 7
169 Dahlman, 2007
170 UNESCO p, 24
171 advanced research or PhD level
172 UNESCO p. 30, UNESCO makes the distinction according to whether a public agency or a private entity has the ultimate control over an institution. Ultimate control is decided with reference to who has the power to determine the general policies and activities of the institution and to appoint the officers who manage it.
173 UNESCO, 32.

In addition to the privatization of the sector, tertiary education institutions are diversifying to meet the new emerging needs. Higher education institutions are diversifying through adding new content, such as emerging fields and technical specializations, or employing new methods, such as e-learning and distance learning. Diversification of the sector is particularly important in low- and middle-income countries where tertiary enrolment levels remain relatively low, partly due to the lack of institutional differentiation to accommodate the needs and nature of the growing and varied demand. [74] Moreover, with the increased rate of change in the global economy, industries and professionals will demand more and better options for life-long learning and professional development. This demand pressures institutions to provide more variety and flexibility in their programs. [75] The higher education sector has already begun to evolve to meet this demand through such initiatives as distance learning, online programs and accelerated or nighttime courses.

Yet taking full advantage of these opportunities will require increased cooperation between private sector industries and academia. These initiatives are already well established at many universities and include funding to higher education institutions' research and development programs that are relevant to a certain industry and collaboration on curriculum development to establish a course of study that will meet the needs of the private sector. Private firms may also develop internship programs in partnership with a university and agree to mentor a group of students. Many universities look to the private sector for professors and guest lecturers on subjects related to their industry. Despite a somewhat acrimonious tradition in the relationship between academia and industry, the market now demands greater cooperation to the mutual benefit of both sectors.

3. IT/R&D

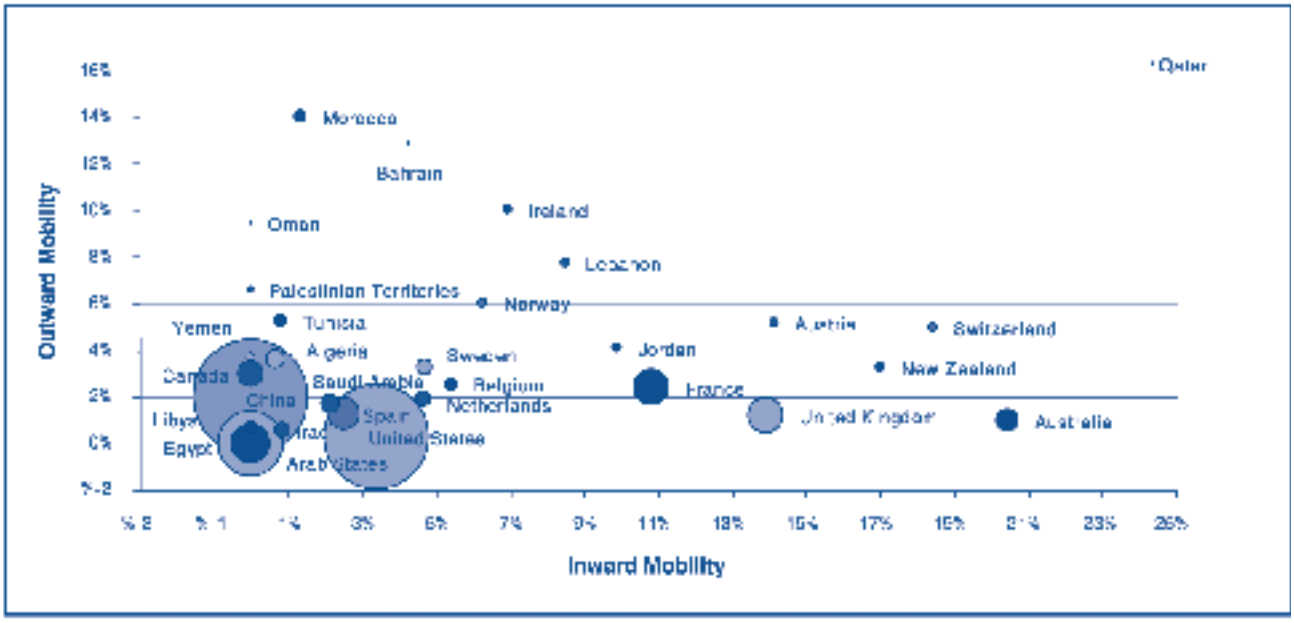
In the context of a knowledge economy, universities and other higher education institutions are increasingly relevant as generators and disseminators of knowledge. Many centers of excellence, incubation, or research and development centers are located on college campuses or closely associated with universities. Universities also have a role to play with assisting in licensing of technology, contract research with firms and public research and consulting services to the private sector. Tertiary education institutions are also becoming important players in helping to develop national competitiveness and development strategies through supporting government with credible research and data on the country itself as well as international best practices. [76] Moreover, the use of IT in the classroom and throughout management of the university holds significant opportunities for increased efficiency in resource allocation.

[174] World Bank (2002), Constructing Knowledge Societies: New Challenges for Tertiary Education. Washington, D.C.: World Bank.
[175] UNESCO, p7-8)
[176] Dahlman, 2007

4. INTERNATIONALIZATION

Numbers of internationally mobile students, those who are not permanent residents of the country where they study, jumped by 41% from 1.7 million in 1999 to 2.5 million in 2004. [77] Yet, global enrollment in those same years increased by 40%, meaning the world outbound mobility ratio [78], or the share of mobile students among the total number of students, increased by only 1.87%. [79] On a national level, high outbound mobility ratios indicate that the country is unable to meet the needs of certain groups of students. Within Arab states, the outbound mobility ratio was over 1 percentage point higher than the global average at 2.9% in 2004, up from 2.3% in 1999, the largest increase of any region. [80] The largest group of outbound students comes from East Asia and the Pacific, and represents 29% of the world total. This represents a significant opportunity for Jordan given the large number of Muslim students in Malaysia, Indonesia, and elsewhere in the region, many of whom may be looking to pursue their studies in a Muslim country. While the majority of internationally mobile students in Western Europe stay within their home region, only 13% of Arab students study abroad in the Middle East, the majority of whom, approximately 13,500 students (representing almost 10% of total enrollment), choose Jordan. [8] Other countries in the region with large percentages of inbound foreign students compared to their total number of students include Bahrain (4.2%), Lebanon (8.5%) and Qatar (24%). [82]

Figure 7.4 - International Mobility in Higher Education Size of circle represents total tertiary enrollments



source: UNESCO Institute for Statistics, 2005

This trend of international student mobility has led to the development of cross-border institutions that take the form of universities with a physical presence in foreign countries, associations of foreign institutions with local universities or internet-based courses available to students remotely. Although very useful and responsive to evolving demand, these institutions are the subject of growing concern, largely regarding the quality, reliability and accreditation of their cross-border programs.

177 UNESCO, Global Education Digest 2006, p. 34 this does not include students studying abroad for less than one year or those students who are residents of a country but completed their previous education elsewhere.
178 The outbound mobility ratio compares the number of students who choose to pursue their studies outside their home country with the total number of students enrolled in that country.
179 mobile students coming from a country/region as a percentage of all tertiary students in that country/region (UNESCO, p. 38)
180 Unesco, 37
181 Unesco, 41
182 World Bank data

Regional Trends: Middle East and North Africa

In addition to the global trends described above, several regional trends characterize higher education in the Middle East and North Africa (MENA). These include fostering partnerships with foreign institutions, the growth of American-style liberal arts education and increased enrollments, particularly from international students. In Egypt, the already extensive landscape of international programs was further enhanced by the founding of the German University in Cairo which opened in 2003. Qatar's Education City initiative is well-known and through comprehensive incentives has attracted several prestigious educational programs, including several US universities such as Georgetown University's School of Foreign Service, Carnegie Mellon University, Virginia Commonwealth University's School for the Arts, Texas A&M University, and Weill Cornell Medical College. UAE has pursued similar efforts through its Dubai Knowledge Village, which has already attracted numerous British and European universities and is looking to attract US institutions like Boston University, and Abu Dhabi Educational Zone, which is working with New York University to open a branch campus there. [83] George Mason University's campus in Ras Al Khaimah, UAE is scheduled for completion in 2009. For its part, Bahrain has begun a Science City 2010 initiative. Within the next 5 years, Kuwait will have approximately ten private American-style institutions of higher education for a population of less than 3 million. [84] Jordan is host to a branch of the New York Institute for Technology (NYIT) which also has branches in Abu Dhabi and Bahrain and German Jordanian University was founded in 2005. Additionally the nursing degree at Al-Zaytoonah University is affiliated with the University of Nebraska College of Nursing and Al-Ahliyya University in Amman offers English-language instruction. [85]

Similarly, demand for American-style education is increasing; due to greater visa complications and security issues, many Arabs are looking for opportunities to gain the opportunities provided by an American-style education, closer to home. The liberal arts paradigm of American-style education differs significantly from the traditional approach in most Arab countries. State-owned Arab universities are based on a system of lectures and examinations which require students to memorize and regurgitate facts. The liberal arts model is based on fostering a deeper level of learning through the development and expression of well-analyzed opinions with an emphasis on classroom discussion and interaction and extensive research. [86] Despite the demand for and development of American-style institutions, these universities face challenges including government-dictated ratios of foreign to national faculty, high faculty workloads, the absence of tenure-tracks and a basic education system that does not prepare students for liberal arts university education. Evidence of efforts to meet this demand can be seen in then recently established American Universities of Sharjah (1997), Dubai (1995) and Kuwait (2004) joining the historically well established American Universities in Cairo (1919) and Beirut (1866). In fact, in the MENA region, only Iraq, Libya, Tunisia, and Yemen offer no American-style higher education. [87]

[183] http://www.nytimes.com/2007/08/31/nyregion/31nyu.html?_r=1&oref=slogin
[184] USIME p. 7
[185] USIME p. 7
[186] (AUIME, p. 2-3)
[187] USIME p. 4

Another trend is increased enrollments. Tertiary enrollment in Arab states increased from 2 million (1991) to 7 million (2004) [88] : a higher percentage increase than any other region and an average of 8% per year. Despite a steady rise in the tertiary school-age population, the gross enrollment ratio, or the ratio of the number of students to the student-age population, still improved from 11% to 19%. The growth rate slowed after 1999 which is largely attributable to the slowed growth in tertiary-age population and a minor recession in the regional economy.

Although not yet of large volume, another trend is that of international students, not from the Middle East, coming to the region to study Arabic or pursue degrees in Middle Eastern/Islamic studies. While Arab countries have traditionally received very few students from outside the region, with increasing interest in the Middle East along with more higher education institutions offering English as the language of instruction, the region could take advantage of this opportunity if its universities can understand and meet this international demand.

188 (Unesco p. 23)

3. Recent Performance of Jordan's Industry

Developing human resources is one of our priorities in the coming phase, since Jordan's real, great asset is the Jordanian individual. Invest in human resources in the context of the knowledge economy, in particular with respect to IT, teacher training, developing curricula, and upgrading scientific research and higher education.

- His Majesty King Abdullah II bin Al-Hussein in his speech at the opening of the 14th Ordinary Session of the Parliament, December 1, 2004

Jordanian leadership has recognized the central role higher education will play in the future economic competitiveness of the country. This high-level support has led to significant attention on the sector and pressure to develop concrete strategies to support and expand its performance. The Jordanian leadership feels the pressure to invest in the higher education sector due to the rapidly increasing enrollment rates which have more than doubled in the last 5 years (see Table 7.2).

Table 7.2 - Enrolment rates in tertiary education (001-2006)

	2001	2002	2003	2004	2005	2006
Tertiary enrolment	17.80%	19.40%	20.62%	20.80%	24.50%	38%

Data sources: Global Competitiveness Report: 2001, 2002, 2003, 2004, 2005, 2006.

These enrollment figures have increased partly due to the addition of several new higher education institutions but also because the relative youth of Jordan's population means that each year there are more students graduating high school and seeking higher education. Thus raw enrollment numbers are also increasing; in the 2006/2007 school year, the total number of BA/BS students enrolled in Jordanian universities and community colleges was 202,990 and 26,215 respectively. Another explanation for the increasing enrollment rates could be a reversal of the 'brain drain' trend with Jordanians who were previously studying abroad returing to complete or continue their studies in Jordan.

The higher education sector also contributes to the Jordanian economy by providing thousands of well-paying jobs. Universities employ large numbers of lecturers and other academic staff totaling 6,832 individuals during the 2006/2007 school year. The previous year all higher education institutions including community colleges employed 8,793 academic staff, of which 5,585 held PhDs. [89] Although the total number of academic staff has been increasing in recent years, the teacher-student ratio decreased from 1:24 in 2001 to 1:27 in 2006 showing that staff increases did not keep up with student enrollment growth.

Table 7.3 - The development of total number of academic staff in the Higher Education Institutions (public and private Jordanian universities and colleges):

	2001	2002	2003	2004	2005	2006
Academic Staff in HE Institutions	5,547	6,816	7,470	7,735	8,205	8,793

Data sources: The Ministry of Higher Education Annual Reports 2001/2002/2003/2004/2005/2006

Throughout the 1990s a large number of students left Jordan to pursue their tertiary education abroad. This

[189] statistical annual report 2005/2006

number was relatively stable throughout the decade as illustrated through the number of Jordanian students abroad in 1995 and 2000, 29,851 and 31,003 respectively. From 2000-2005 this trend began to reverse and the number of outwardly mobile students dropped to 24,974. This is in part due to the establishment of new Jordanian universities but also to existing universities increasing their enrollments. Moreover, the higher cost of pursuing education abroad and the new security restrictions enacted after September 11, 2001 also played an important role. The number of Jordanians studying in the US notably decreased by almost 25% in just 4 years.

Table 7.4 - Jordanian Students in the US

Year	2002	2003	2004	2005
Students from Jordan	2,417	2,173	1,853	1,832

Source: UNESCO, Institute of Statistics

Over the 5 year period illustrated in the table below, overall numbers decreased with the single exception of Jordanians seeking an 'intermediate diploma.' The most dramatic decreases are found among students seeking PhDs and Medical Specializations outside Jordan. This is potentially an indication of the increasing quality and attractiveness of the domestic higher education sector in Jordan vis-à-vis its regional and international competitors, particularly in high-level specializations. This may also be attributed in part simply to the increased number of institutions in Jordan.

Table 7.5 - Jordanian students studied abroad in their specific fields:

Jordanian students abroad	2001	2002	2003	2004	2005	2006
Intermediate Diploma	355	464	483	426	397	401
B.S./B.A	16550	20310	15465	14178	13500	14188
Higher Diploma	196	69	72	97	82	85
MA/MS	1795	1745	1417	1333	1551	1504
PhDs	1641	1544	1158	1063	1024	929
Medical Specialization	489	1187	826	822	359	198
Total	23003	25825	19221	17727	16871	17220
# of other students estimated from not listed countries	8000	8000	8000	8000	8000	8000
Total	31003	33825	27221	25727	24874	25220

In addition to attracting more Jordanian students to remain in the country to complete their education, Jordan continues to attract many international students. Jordan enjoys a good reputation for training programs at its universities.

International students represent a significant portion of the students in Jordan (9.86% in 2005) [90]. Half of these inwardly mobile students are concentrated in 4 areas of study: business administration (17.7%), computer science and IT (13.2%), engineering (12.9%), or law (7.2%). [9]

Table 7.6 - The Main Discplines that Jordanin Students Study Abroad 2005/2006 [92]

Humanities &Religion Science	1222
Commercial Business Admi.	1195
Medicine, Dentistry and Pharmacy	3479
Eng., Architecture Town Planning	1790
Mathematics &Computer Science	619
Natural Science	418
Law	905
Social &Behavioral Science	465
Other Programs	9500

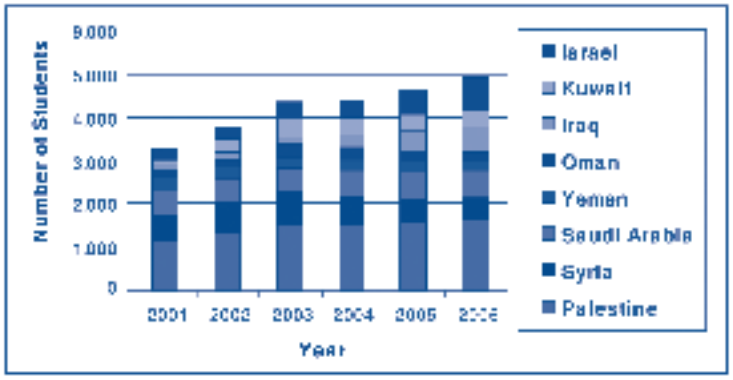
Figure 7.5 illustrates the distribution of international students attending Jordanian universities during the past 5 years from the 8 most common countries of origin. Both public and private universities host students from all over the world but predominantly from Palestine, Syria, Saudi Arabia, Yemen, Oman, Iraq, Kuwait and Israel. The total number of foreign students admitted to higher education institutions in 2006 was 6,703, up from 5,442 in 2005, contributing to a total enrollment of 24,487 foreign students in 2006 compared to 22,409 in 2005.

Jordan University of Science and Technology (JUST) hosts the most international students (3,651) while University of Jordan (3,068) is not far behind. International students represent a higher percentage of graduate students (11.21%) than of undergraduate students (6.66%) in public universities, illustrating the proportionally greater appeal of higher levels of education to foreign students.

These numbers are significant, largely because international students pay much higher fees and contribute thousands of dollars to the Jordanian economy simply by living in Jordan. The total expenditures of foreign students in Jordan including fees and personal expenditures is approximately JD 222 million (USD $317 million). Foreign students' expenditures, including tuition, average USD $13,000 for their 9-month stay in Jordan and they spend between USD $500-USD $1,100/month on living expenses. [93] International student enrollment has been growing consistently at around 9% annually. Jordan's Vision 2020 seeks to increase annual growth to 10.5% resulting in approximately 100,000 international students in 2020 contributing an estimated JD 929 million to the economy. [94]

190 UNESCO data
191 JV 2020 HES p. 18
192 Data sources: the ministry of higher education and scientific research annual reports for Jordanian students studied out-side Jordan (2005/2006)
193 JNCO Calculations
194 JV 2020 HES p. 5

Figure 7.6 - Number of Arab students attending Jordanian universities by country



Source: Ministry of Higher Education (2001 - 2006)

In addition to these numbers, international students support the emerging field of educational tourism. International students in Jordan receive visits from their friends and family on average 2.44 times each year with an average duration of 6.5 days. Consequently, each international student brings with him/her an additional 16 days of tourism, notably 4 times the average length of stay. [95] Additionally, many International students pursue domestic tourism while in Jordan, traveling to various sites throughout the country.

Table 7.7 - Student enrollments by nationality (Jordanians/non-Jordanian) in the public universities, 2005/2006:

University	Undergraduate		Graduate Studies		Total		Grand Total
	Jordanians	Non Jordanians	Jordanians	Non Jordanians	Jordanians	Non Jordanians	
University of Jordan	31028	2368	3786	680	24790	2068	37827
Yarmouk	17711	1018	3272	363	20983	1871	22854
JUST	15809	3428	1246	193	15055	3651	18706
Hashemite	16865	720	514	16	16358	736	17106
Al Balqa	17567	400	703	31	18324	506	18830
Mutah	14620	754	1409	153	16037	907	16944
A. Hussein	6044	74	67	-	6111	74	6185
Aal Al Bayt	12955	395	818	70	13973	393	14366
Total	128988	9200	11925	1536	140911	10708	151617

Data sources: the Ministry of Higher Education Annual Report 2005/2006

Consequently, the ratio of international student spending to per capita income, or the 'economic significance' of each international student, is 5.4 in Jordan, second only to Lebanon (6.9) in the MENA region. Comparatively, the economic significance of international students in the US is only .56. [96] This means that each international student spends enough money to support roughly half the per capita income of the average US citizen whereas in Jordan, the average international student contributes to the economy the equivalent of the per capita incomes of more than 5 Jordanians.

[195] JV 2020 HES p. 5
[196] JV 2020 HES p. 6

The main strength of the sector is the stability and central location of Jordan coupled with its society that is both modern and conservative and consequently appeals to Arabs from other countries. The quality of its educational system is also a strength, although with greater regional competition it remains to be seen if Jordan will be able to consistently upgrade its quality to meet evolving industry demand. The higher education sector in Jordan can boast a generally well qualified faculty although brain drain, the migration of skilled and experienced faculty, presents a significant challenge to higher education institutions. 65% of industry respondents agreed [97] that brain drain is "a significant issue for my organization and severely compromises my organization's ability to train and retain quality workers."

As previously mentioned, Jordanian universities have only minimal cooperation with the private sector and consequently can not guarantee employment for their graduates. Moreover, partly due to a lack of partnerships with the private sector, there is very little funding for research and development and many professors are overwhelmed with large course loads, leaving them unable to devote time to research. Another weakness of the industry is the lack of international marketing activities on the part of universities. Only 20% of industry respondents indicated that a common marketing and promotion effort for the higher education system in Jordan exists, is correctly focused on the key potential markets and is being implemented. Finally, quality control, accreditation and governance issues further weaken the competitiveness of the industry.

Yet, opportunities exist through incorporating IT solutions to help facilitate distance learning programs that could ease the stress of over-enrollment and address other constraints to growth. Moreover Arab demographics and population growth rates are extremely high: this guarantees high demand for higher education for many years to come. [98] Threats to the sector include negative impacts as a result of the continuing conflict in Iraq, such as losing foreign faculty, and further government reductions for subsidies and budgetary support to the sector.

The table on the following page illustrates the distribution of international students by the level of education they are pursuing and whether they chose a public or private institution. International students had an overwhelming preference for private institutions at the bachelors level and the reverse preference for graduate degrees, although, this can be partially explained through the absence of private graduate degree programs prior to 2005. An increasing number of inbound students are choosing community colleges and the number only slightly trailed the number of inbound students pursuing graduate degrees in 2005.

[197] Either responded 4, or 5 on survey

[198] A large proportion of our foreign students are from Oman, Kuwait and Saudi Arabia. These countries were in the world's top 15 growing countries in 2003, witnessing population growth rates of 3.38%, 3.34% and 3.27%, respectively (see http://www.nationmaster.com/graph-T/peo_pop_gro_rat).

Table 7.8 - The development of foreign students' enrollment during 2001/2006 in Higher Education Institutions:

Foreign student data	2001		2002		2003		2004		2005		2006	
	public	private	public	private	public	private	public	private	public	private	public	private
Number of foreign students Enrolled BSc	6990	5738	7596	6586	7607	8209	8708	9574	10569	8853	9714	11840
Total	12728		14182		15816		17782		19422		21054	
Graduate studies foreign students Enrolled	671	0	322	0	1109	0	1451	0	1280	221	1508	493
total	671		322		1109		1451		1501		1998	
Foreign academic staff	322	474	304	544	293	635	286	607	265	574	287	587
total	796		848		928		893		839		874	
Foreign students at community colleges												
Total	1000		1203		111		732		1476		1434	
Total number of foreign students BSc graduate studies &Comm colleges	14509		15369		17036		19365		22409		24487	
Total academic staff	796		848		928		958		935		874	
Number of BSc foreign student enrolled per year,admitted per year	2316	1511	2221	2111	2363	2621	2400	2732	2391	2588	2583	3147
total	3827		4332		4984		5132		4959		5710	
Graduate studies foreign students enrolled admitted per year	333	0	322	0	275	0	875	0	401	92	633	360
Total	333		322		375		875		493		993	
Total number of foreign student s. BSc & graduate studies admitted per year	4160		4654		5359		6007		5452		6703	

Data sources: The Ministry of Higher Education Annual Reports: 2001/2002/2003/2004/2005/2006

4. Regional and International Benchmarking

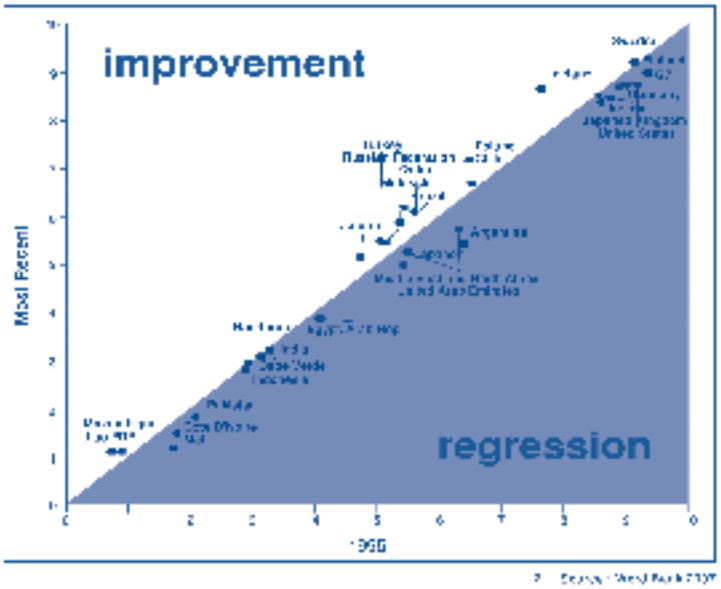
As previously mentioned, Jordan performs well regionally across many higher education indicators and often falls just below Lebanon, an established regional leader. Yet GCC [99] countries are offering increasingly strong competition through large financial investments and linkages with internationally renowned overseas educational institutions.

Qatar Education City

Qatar Educat on C ty, founded n 1997 by Her H ghness She kha Mozah b nt Nasser A M ssned on a 2,500 acre campus outs de of Doha, s current y home to more than 2,000 students, pro ected to quadrup e by 2015. The Educat on C ty hosts nst tut ons and programs that serve students from ear y ch dhood educat on to post-graduate study, nc ud ng campuses of prest g ous Amer can un vers t es nc ud ng Georgetown, Corne , Carneg e Me on, Texas A&M and V rg n a Commonwea th. The Qatar Foundat on attracted these nst tut ons through comprehens ve financ ng, a ow ng student fees to return to home campuses and prov d ng state of the art nfrastructure a ong w th reported y mu t -m on do ar donat ons to the un vers t es. The government a so pays the tu t on of every Qatar student study ng at Educat on C ty wh ch n turn serves as an ncent ve for fore gn nst tut ons to open a campus there. Educat on C ty s env s oned as a reg ona eader n promot ng the generat on of new know edge by creat ng wor d-c ass fac t es such as the newest add t ons to the C ty, the Co ege of Eng neer ng and Qatar Sc ence and Techno ogy Park. The RAND Corporat on s he p ng the Supreme Educat on Counc deve op new curr cu a w th a sh ft to focus on prob em so v ng, creat ve th nk ng and persona respons b ty w th the goa of produc ng proact ve students.

Much research and analysis have been done internationally on the importance of countries developing knowledge economies. In order to compete in the global economy, it is no longer sufficient to have low costs on labor and/or raw materials. In the information age, countries must work to develop their human capital through targeted interventions in the following areas: economic and institutional regime, education, innovation, and information and technologies (ITs).200 These initiatives require a vibrant higher education sector. The degree to which a country's economy is knowledge-based is essentially a measure of the productivity of higher education. Higher education is the fuel for human capital and countries and institutions world-wide are proactively thinking of ways to measure it. Jordan has achieved an improvement in its Knowledge Economy Index201 since 1995, which puts it above the regional average and above Lebanon and Egypt which experienced regression rather than improvements in the same period of time.

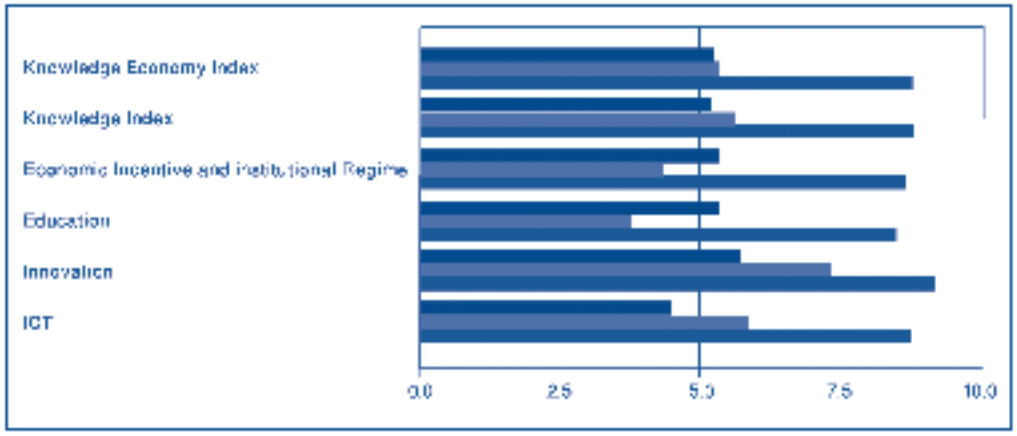
Figure 7.6 – Knowledge Economy Index



199 Saudi Arabia, Kuwait, Bahrain, Qatar, the United Arab Emirates, and the Sultanate of Oman
200 http://go.worldbank.org/AW9KZWJB10
201 World Bank Data

The World Bank Knowledge Assessment Methodology tracks general indicators for countries, groups of countries and regions. The chart below illustrates Jordan's strengths and weaknesses compared to the greater Middle East and North Africa region and also against the G7[202] countries which represent international best practices. Although Jordan scores on par with the region in the Knowledge Index[203] and Knowledge Economy Index[204] , and exceeds regional competitors in terms of Institutional Regime, it still trails considerably in the areas of Innovation and IT.[205]

Figure 7.7 – Knowledge Economy Indicators: Jordan, Middle East and North Africa, G7 (most recent)



Source : World Bank 2007

The World Bank has also developed a Basic Scorecard to use when comparing countries and includes the indicators in Figure 7.8 below:[206]

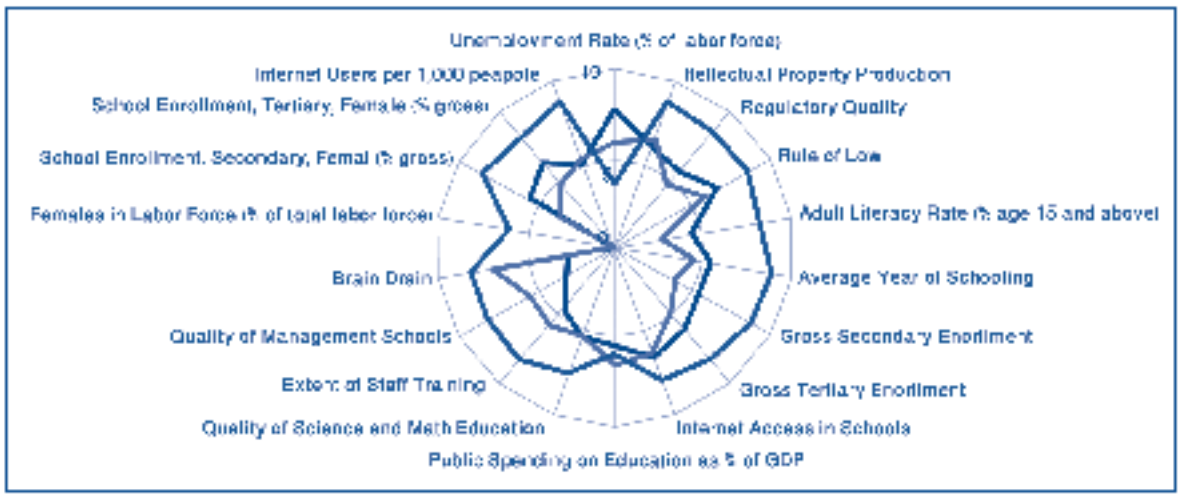
Although Jordan performs comparatively well in GDP growth, enrollment rates and literacy, IT penetration remains much lower than in the MENA region. Jordan notably has a higher unemployment rate when compared to the MENA region and consequently brain drain is particularly acute in Jordan. Although public universities were initially designed to fill the requirements of the public sector, the number of graduates far exceeds the capacity of the Jordanian government to provide jobs, causing many graduates to seek employment elsewhere, many in the Gulf or Europe if they can not find suitable jobs in the Jordanian private sector. The curricula and faculty are largely insufficient for effectively preparing students for employment in the Jordanian private sector. Quality of academic staff and institutions is another indicator where Jordan trails the regional average. The Jordanian government is working on a national quality accreditation system for higher education institutions as well as for teachers and other academic staff.[207]

In 2007 the Accreditation Council became independent from the Ministry of Higher Education and Scientific Research with the goal of becoming a monitoring and evaluation body for all higher education institutions in Jordan. The Council oversees both public and private accreditations of higher education institutions. In addition,

[202] the United States, Japan, Germany, France, United Kingdom, Italy and Canada
[203] KI measures a country>s ability to generate, adopt and diffuse knowledge. This is an indication of overall potential of knowledge development in a given country. KI is the simple average of the normalized performance scores of a country or region on the key variables in 3 Knowledge Economy pillars - education and human resources, the innovation system and information and communication technology (IT).
[204] KEI takes into account whether the environment is conducive for knowledge to be used effectively for economic development The KEI is calculated based on the average of the normalized performance scores of a country or region on all 4 pillars related to the knowledge economy - economic incentive and institutional regime, education and human resources, the innovation system and IT.
[205] http://go.worldbank.org/SDDP3I1T40
[206] http://info.worldbank.org/etools/kam2/KAM_page2.asp , Knowledge Assessment Methodology (KAM), Knowledge for Development Program, World Bank Institute (WBI), World Bank, MENA countries: Algeria, Bahrain, Djibouti, Egypt, Iran, Israel, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, Yemen
[207] (MORE DETAILS FROM NOUR)

all the higher education institutions in Jordan have membership in this council as required by the new law of this council. This council will play a vital role in enhancing the quality of higher education in Jordan. Moreover, for quality assurance purposes, most Jordanian universities, both public and private, have offices for quality assurance which are related to the Accreditation Council.

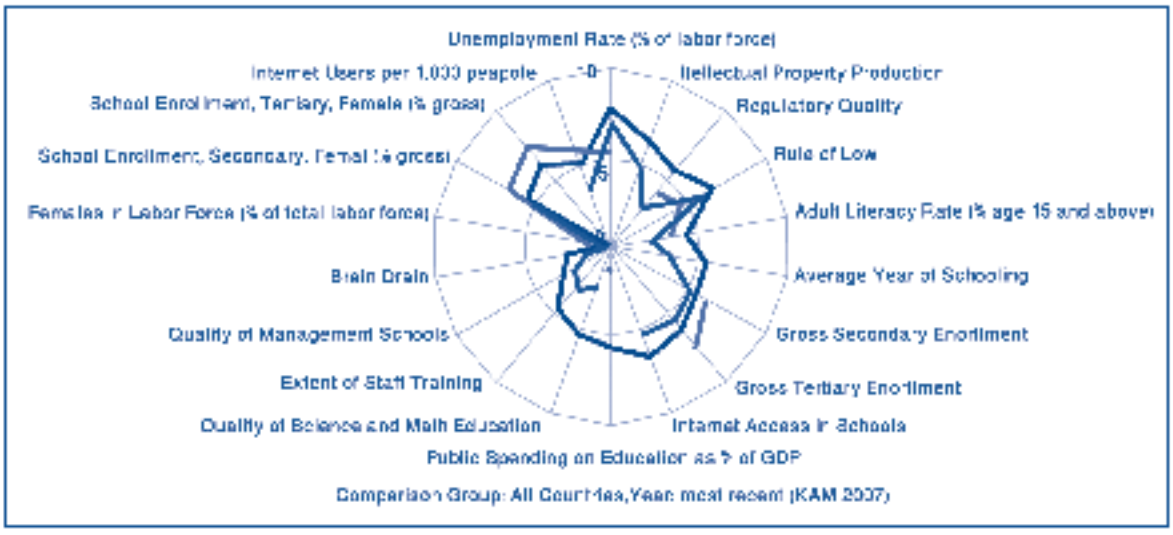
Figure 7.8 – Knowledge Economy Scorecard: Jordan, Middle East and North Africa, G7



Source : Word Bank,2007

Compared to regional competitors Egypt and Lebanon, Jordan has much higher annual GDP growth and boasts stronger regulatory quality and rule of law. Jordan outperforms Egypt across every indicator and most notably trails Lebanon in IT indicators.

Figure 7.9 – Knowledge Economy Scorecard: Jordan, Lebanon, Egypt



Source : Word Bank,2007

Jordan, like Egypt faces significant challenges in the areas of governance, weak research capacity, funding cuts and demand-driven curricula. These similarities persist despite Egypt's sector's much longer history and much larger scale. In Lebanon, however, the sector has experienced relatively low levels of government intervention and consequently has been able to develop institutional autonomy and a wider variety of programs.

The Lebanese higher education sector is more innovative and responsive to market trends and student needs, however the political instability has caused significant difficulties for universities, particularly in attracting foreign students and faculty.

Egypt

Egypt is home to some of the best universities in the region and hosts the largest number of students. Yet growth of the industry stagnated somewhat due to the legacy of the political instability in the 1960s and 1970s and the current economic crisis. In the last few years this trend has shown signs of reversal with the establishment of new universities including the British University of Egypt (2005) and al-Ahram Canadian University.[208] Yet the Egyptian government still places restrictions on higher education institutions; for example, the American University in Cairo is required to hire 70% Egyptian and 30% international faculty.[209]

Egypt is a regional leader in the Arab world in a variety of fields including culture, politics, economics and education. This is partly because Egypt has the largest population in the region, but also results from its significant history and active efforts in the pan-Arab movement.

The total number of higher education students in Egypt reached almost 2.5 million in 2006, up from 1.8 million in 2001 and the student-professor ratio in Egypt reached around 36 pupils per professor. These students were distributed throughout 26 higher education institutions in Egypt, along with a number of community colleges.

According to the "Global Competitiveness Report", the quality of scientific and research institutions in Egypt showed a gradual decline over the years. The same trend applies to university - industry research collaboration; in fact, within the latest report most business executives cited that business collaboration with local universities in Research & Development activity is almost minimal or non-existent.

There are 2 parallel education systems in Egypt; the secular system and the religious system, also known as the "Al-Azhar System". Higher Education is largely performed by the public sector, comprising of public universities and numerous non-university institutions. The private higher education sector is mainly comprised of a few private universities. (The total number of private universities reached 9 universities in 2004/2005).

Three institutions govern and control the higher education system in Egypt; they are: the Ministry of Higher Education (MoHE), the Supreme Council of Universities (SCU) and the Central Administration of Al-Azhar Institutes. The MoHE has jurisdiction over higher education through supervision and coordination of all post-secondary education, planning, policy formulation, and quality control. The SCU formulates the overall policy of university education and scientific research in universities and determines the number of students to be admitted to each faculty in each university.

Supervision and administration of the Al-Azhar higher education system is the responsibility of the Central Administration of Al-Azhar Institutes development which aims at enabling the spread of Islamic culture and Arabic language through Al-Azhar higher education system.

[208] AUIME p. 6-7
[209] (AUIME, p2)

Main Challenges facing Higher Education System in Egypt According to the World Bank's Higher Education Enhancement Project (HEEP)[210], the main challenges that face the Higher Education system in Egypt are:

1. **Complex and inefficient system-wide governance and management**
2. **Weak educational knowledge of the university level graduates**, which is mainly attributed to deficiencies in academic inputs and educational processes likewise
3. **Weak educational knowledge of the middle technical level graduates** which leads to a huge gap between the training system outputs and labor market needs
4. **A compression of per-capita student resources** despite the expansion of public spending on education in Egypt. This re duction in resources has had a major impact on the quality of instruction and facilities. Although the Egyptian Government has emphasized the importance of higher education to Egypt's development schemes, such efforts would be difficult to undertake if public funds remain the sole source of finance.

Reform Initiatives

The Egyptian MoHE has embarked on a reform process which began in 2000 to address the diverse areas of reform through the following 6 main projects; Higher Education Enhancement Project Fund (HEEPF)[211], Information and Communications Technology Project (ICTP)[212], Faculty Leaders Development Project (FLDP)[213], Faculty of Education Project (FOEP)[214], Egyptian Technical Colleges Project (ETCP)[215] and Quality Assurance and Accreditation Project (QAAP).

The Quality Assurance and Accreditation Project (QAAP): The QAAP is governed by a National Committee (NQAAC). The mission of NQAAC is to ensure quality, continuous development and efficient performance of Egyptian education institutions. As such, the main objectives of NQAAC are to develop a National Quality Assurance and Accreditation system in Higher Education Institutions (HEIs) and establish a National Quality Assurance and Accreditation Agency (NQAAA). Currently there are 11 QA established centers in Egyptian Universities and two more centers are still in progress.[216]

Research in Egyptian Universities

Egyptian university-based research is weak due to the following reasons;

- Increased number of universities with escalating number of students. High student enrollment creates pressure for profes sors and consumes time that could otherwise be spent on research.
- High student to staff ratio, reaching almost 37:1 in 2004, up from 26:1 in 1999.
- Research expenditure in Egypt is very low.
- One of the most serious problems is the system of promotion which often depends on tailoring research to state imposed
  standards rather than increasing knowledge in the field.

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210 A part of a comprehensive reform strategy for higher education in Egypt
211 The main aim of HEEPF is to enhance quality, relevance and efficiency in higher education through establishing a sustainable competitive mechanism among Egyptian Universities
212 Aims at improving and upgrading university infrastructure and converting university management systems to computer-based management to have quick and easy access for knowledge and to link the Egyptian universities with both the Egyptian Universities Network (EUN) and the National Network of Scientific Research (NNSR). The ITP also aims at preparing the academic community to deal with the technological revolution.
213 Aims at enhancing the institutional and professional potentials of higher education institutions in addition to developing the skills set of faculty members.
214 Aims at developing and modernizing the faculties of education.
215 Aims at qualifying technicians in different specializations and developing and enhancing technical colleges to be accredited training centers
216 "QAAP Quarterly Progress Report Q12007", April 2007

- The lack of procedures for monitoring research which leads to plagiarism, which is widespread in Egypt. This devaluates
  scientific research and opens the door to the falsification of results.
- Poor training of research personnel is another key factor that is responsible for deteriorating research quality in Egypt.

Lebanon

Despite repeated instability, Lebanon is the second regional leader in higher education. Lebanon hosts more than Fourty American-style universities; most notably among them, the American University in Beirut (AUB) and the Lebanese American University (LAU) were established in the 19th century and gave the country a head start over its neighbors. Lebanese universities enjoy a low level of government interference and have consequently been able to develop institutional autonomy and acquire an extensive variety of programs.[217]

Despite the sector's perseverance, political instability remains a significant concern and constraint to competitiveness. The civil war in Lebanon caused AUB and other universities to lose their American and international faculty and foreign students. AUB faced particular hardship as one president, David S. Dodge, was kidnapped in 1982, and another president, Malcolm Kerr, was assassinated in 1984.[218]

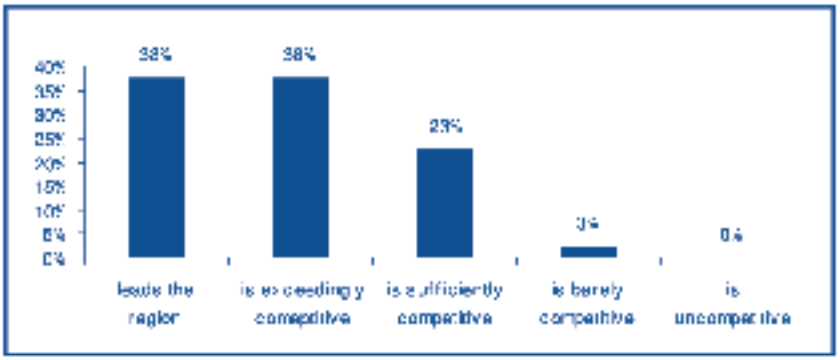
The total number of students in Lebanon reached 147,000 in 2005 (latest figure available) up from 125,000 students in 2001, illustrating an average annual growth rate between 4% and 5%. In the same period, international students increased almost 19% to reach a total of 16,000 students, representing approximately 11% of all student enrollments. In 2005, Lebanon had 38 higher education institutions with an impressive average student-teacher ratio of 11:1. University professors earn an average of USD $2,300/month.

Also, the number of PhD graduates in Lebanon grew by an average rate of 9% within the period 2001-2004; the total number of PhDs awarded annually reached 911 in 2004, up from 677 in 2001.

In 2005[219], the majority of the international students in Lebanese Universities were enrolled in Humanities, Social and Law Studies fields (67%); this trend has been persistent over several years. Services, communications and languages came second in line with almost 17% of the student enrolled into this field. Scientific fields were the least attractive for foreign students in Lebanon and captured almost 16% of the enrolled students; 12% in "Sciences and Engineering" and 4% in "Medical and Health Sciences". This is a notable difference from Jordan where there is very high interests in scientific subjects.

217 AUIME p. 8)
218 (AUIME, . 2)
219 Ministry of Higher Education Institution - Lebanon 2005.

Figure 7.10 - When compared with competing systems in the middle east region, the Higher Education system in Jordan



Source : JNCO, Higher Education Stakeholders Online Survey, 2007

Despite the historic leadership of Egypt and Lebanon and the emerging threat from the GCC countries, the vast majority, 76%, of industry stakeholders polled felt that Jordan was leading the region or extremely competitive vis-à-vis the MENA region. This could indicate a false sense of security and an underestimation of the competitiveness of neighboring countries.

In the summary table below, Jordan is benchmarked with higher education systems in the region and internationally. Not all countries track and disseminate the same sets of indicators. The blanks in the table are due to these inconsistencies. In most cases, the numbers do not come from the same source - there may also be inconsistencies in definition and data collection. As a result, the benchmark data should be considered directional for comparison purposes only, not precise calculations. In all instances, the number shown is the last available year. Each number is individually sourced from country specific sources. A more extensive benchmarking table and individual sources can be found on the Jordan Competitiveness Observatory website.

Table 7.9 - International Higher Education Benchmarking Data

	Jordan	Egypt	Lebanon	USA	UK	Sweden
Total number of students	217,623	2,594,166	185,730	17,648,000	2,336,110	349,600
Total student expenditures	618,216,144	N/A	N/A	255,617,323,000	1,640,799,000	0
Number of international students	5,710	N/A	15,891	564,766	318,399	39,298
International student expenditures	221,826,945	N/A	N/A	5,255,955,591	2,515,352,100	0
Number of HE institutions	69	26	38	4,276	169	48
Enrollment Rate	39%	34%	61%	38%	59.70%	82%
Average salary of faculty	N/A	N/A	27,600	66,172	N/A	53,660
Number of PhDs awarded	413	N/A	911	49,600	16,080	2,700
Total academic staff	8,664	59,224	13,778	1,250,000	154,975	83,010

Table 7.10 – Comparison Table of International Higher Education Systems

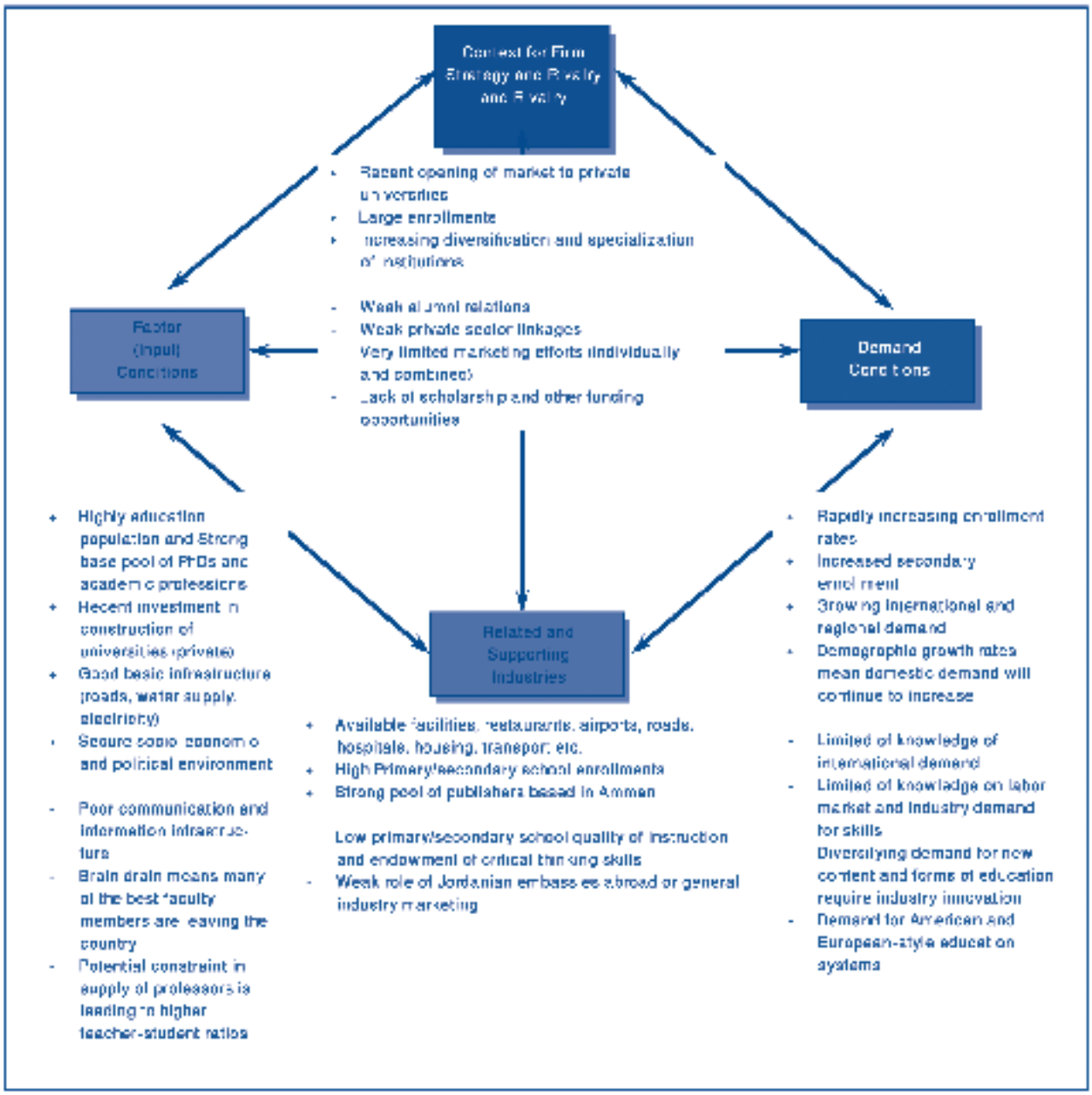
	US	UK	Sweden	Jordan
Enrollment	17.3m students 4,258 institutions	169 colleges and universities 2.26m students	.45m students 50 institutions	.22m students 13 public and 16 private universities, community colleges
Inbound/out bound Mobility	27k/314k	18.8k/3.3k	4.7k/3.3k	9.9k/4.1k
Public vs. private	3%of GDP on all levels of edu expenditure on tertiary, public sources - 1.82%, private sources -- 1.66% In 2005, 1,675 public inst, enr - 13 mil 2,578 private inst, enr - 4.4 m Only 13 public institutions are federal, the majority are state	All these institutions receive public funds but are self-governing, independent, and classified as private sector for economic planning purposes. There is a very small group of private colleges, not publicly funded, which provide academic programmes for about 0.8-0.5% of all higher education students, mainly in medical-related, business or theological subjects.	Almost all institutions are public (state-run) and part of a unified system with the exceptions of health, music, drama and other art colleges, government spending on all education was 7.5% of GDP in 2003 (tertiary education 2.2%), strong focus on research	Private institutions didn't appear until 1990 and the government still regulates what programs they can provide. Approximately 80% of students study at private institutions
Funding	Increasingly expensive, average annual expense (tuition, room and board) 10,464 - Public Inst 26,089 - Private Inst	Government limits the amount universities can charge, went up to 3,000 GBP in 2006	Students pay no tuition, government provides stipend for living expenses to those in need	Public expenditure on higher education [222] constitute only .83% of total public spending on education. Government subsidy of public institutions peaked in 2003 rep 35% of univ. expenditures.

[220] HEDF - financial status of public univ.

5. State of Competitiveness

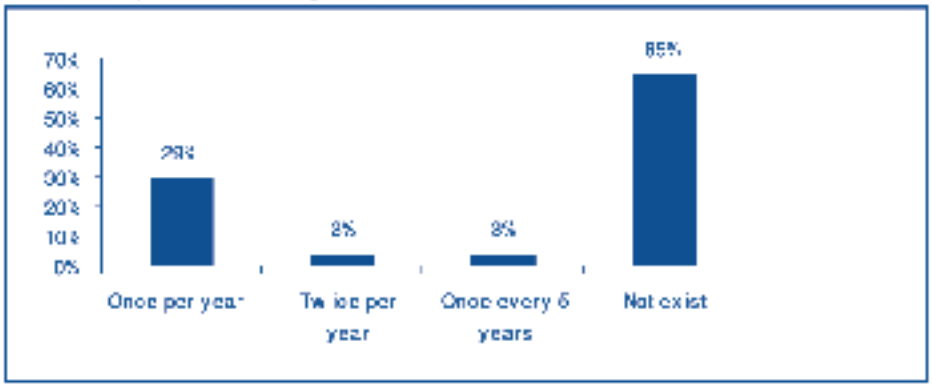
Following the system developed by Michael Porter, the state of a country's competitiveness is determined by 5 major factors: demand conditions, factor (input) conditions, context for firm strategy and rivalry, related and supporting industries, and the role of government. Jordan has strong (and increasing) domestic demand which is a good sign for the sector, although the lack of market knowledge of international student demand and domestic industry demand is a notable constraint. The generally well educated population is an important factor condition along with the overall socio-political stability of the country, yet brain drain continues to rob Jordan of many of its best and brightest. The growth of private institutions is a positive sign of the competitiveness of the sector, although the over-enrollment (as mandated by the government) and the tuition fee price ceiling (also mandated by the government) impede open competition. The quality of available facilities (restaurants, airports, roads, hospitals, housing, and transport) represents positive support for the higher education industry, although often primary and secondary educators do not prepare students for the rigor of higer education. Finally, although the government acknowledges the importance of the higer education sector, it remains an obstacle to the sector's competitiveness in several ways as discussed in further detail below.

Figure 7.11 - Porter Diamond for the Higher Education Sector



5.1 Demand Conditions

Figure 7.12 - How often are international student surveyed on the quality of their experience in higher education



Source : JNCO, Higher Education Stakeholder's Online Survey, 2007

As previously discussed, the demand, both foreign and local, for attendance at Jordanian universities is high. This trend began in 1990 with the start of the Gulf War, the devaluation of the Jordanian Dinar and the opening of the first private university in Jordan.[221] Although a potential opportunity, this demand is also a significant challenge to the industry. Currently Jordanian higher education institutions have limited resources and are already operating at full capacity. In order to capitalize on this growing demand, the industry must expand through new initiatives including opening new and more specialized institutions, developing quality distance and e-learning curricula, and partnering with international institutions.

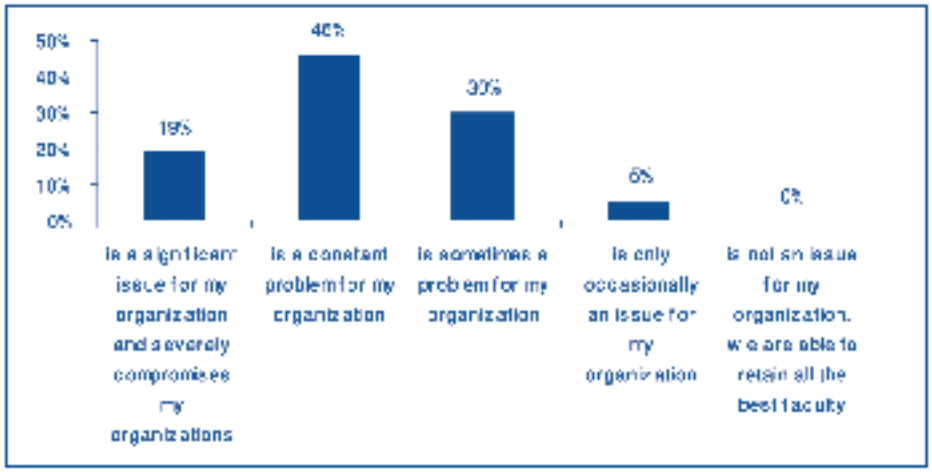
Although efforts have been made to understand the nature of international demand, most notably through a survey by Jordan Vision 2020, there remains a large deficit of sophisticated market information. This is evident in that 65% of industry stakeholders surveyed responded that they never survey international students on the quality of their experience. In order to achieve greater market information the industry must implement sound monitoring and evaluation practices with international students. As previously discussed, demand is diversifying and students are requiring new flexible forms of education, including e-learning/distance learning, part-time programs, and continuing/adult education offerings. Jordan's educational institutions must respond innovatively to this demand in order to stay competitive. Students are also increasingly interested in European and American-style education for aforementioned reasons related to visa issues and increasing demand for English-language skills and rigorous engineering and critical thinking capabilities.

Moreover, the Jordanian higher education industry does not understand the needs of the private sector for skills and technical specialties. A key constraint to the competitiveness of nearly every sector in the Jordanian economy is the lack of sufficient quantity and quality of educated employees. In order to ensure the overall competitiveness of the Jordanian economy and to ensure that young people have the necessary skills to find secure employment, the sector must cooperate more with industries and create demand-driven curricula. Businesses are hungry for grads with skills. If they have confidence in universities to supply qualified grads, they will offer partnerships and resources in return. Thus academia and the private sector can creat a virtuous cycle that positively reinforces the goals of both.

[221] http://www.competitiveness.gov.jo/files/chapter%20Nine.pdf

5.2 Factor Conditions

Figure 7.13 - Braindrain, the migration of skilled and experienced faculty:



Source : JNCO, Higher Education Stakeholders Online Survey, 2007

Jordan boasts several factor conditions that positively influence the higher education sector, including a highly educated population (literacy is nearly 100%), increasing investment in the construction of universities (16 private universities have been built in as many years), comparatively affordable university fees (controversially kept low by the government), and the overall climate of security, culture and hospitality.[222] Yet despite generally high levels of education, Jordan still suffers from brain drain with more than half of sector respondents citing it as a significant issue for their higher education institution. Moreover, although higher education remains largely affordable to students, the limits set by the government on tuition fees impede the ability of the sector to compete and prevent investment in faculty and curricula upgrading.

Additionally, a majority of respondents noted that their location in Jordan offered significant advantages to their organization. These advantages include the major basic factor conditions of Jordan's central location in the region along with the more advanced factor conditions which include the aforementioned stable socio-political environment, strong infrastructure and human capital. Yet despite a general level of basic education, the Jordanian workforce still lacks specialized skills and quality professors are difficult to employ and retain at Jordanian universities.

5.3 Context for Strategy and Rivalry

The number of private universities has increased rapidly over recent years, leading to increased competition in the higher education sector. Moreover, there is pressure from the government for public universities to become more financially independent further increasing competition in the sector. The industry is competing not on price (because it is set by the government) as much as on quality and service. Yet the saturation of the market with increasing numbers of applicants each year and many universities operating at over-capacity implies that there may be less incentive for competition and less ability to develop and adopt higher quality practices. The diversified demand across Jordan and the region will transfer into a further diversification of the industry. Jordanian institutions must compete for this new and growing demand through innovation or risk losing students to other universities inside and outside Jordan. Some universities are already taking steps in that direction; Jordan University, for example, introduced an Evening Studies Program in the fall semester of 2001 as well as

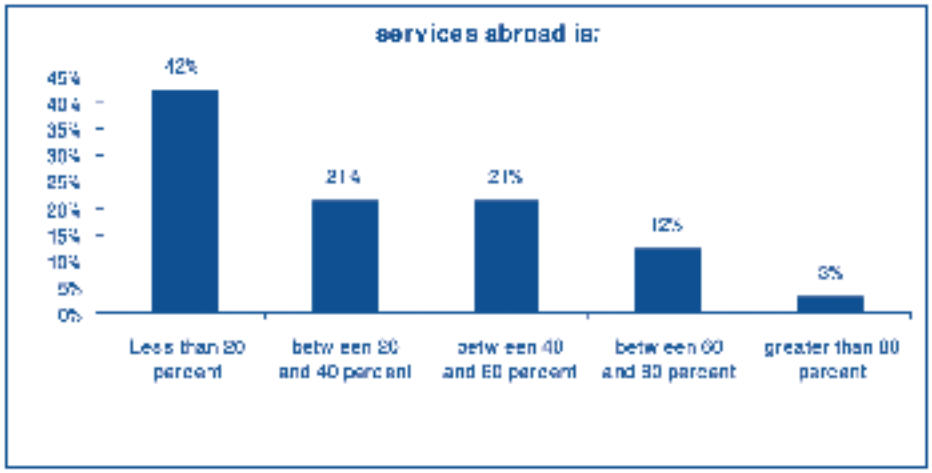
[222] http://www.competitiveness.gov.jo/files/chapter%20Nine.pdf

a Distance Education program.[223]

Governance and resource allocation of the higher education sector is largely controlled by the government rather than allowing the system to respond to the market. The Council on Higher Education (CHE) decides how many students, country wide, shall be admitted into civil engineering, or nursing, or history, or any other field of specialization and has the power to tell institutions to increase their enrollment even if it stretches the limits of their capacity. The CHE appoints private university presidents, vice presidents and deans. The government controls 21 of the 25 members of the council. Moreover, the government appoints the ten presidents of the state universities and has the power to dismiss them at any time for any reason. The CHE along with the Council for Accreditation (CA), and the Higher Committee for Scientific Research (HCSR) are all chaired by the minister.

The industry is working hard to be proactive in responding to growing trends in consumer demand. A large part of this includes developing a strong public-private dialogue which has been previously non-existent. One potential benefit from improved private-sector cooperation could be financing for R&D or other programs. The sector is facing financing challenges with decreasing government budgets and a lack of scholarships and other funding op portunities for students. Weak alumni relations further compound this issue because without effort to maintain relationships with alumni, they will be less likely to donate to their alma mater.

Figure 7.14 · The percentage of higher education institutions in Jordan that are marketing their services abroad is:



Source : JNCO, Higher Education Stakeholders Online Survey, 2007

Moreover, the industry lacks concerted marketing efforts. Only 20% of industry respondents felt that a common marketing and promotion effort for the sector was being implemented. And more than 40% said that less than 1 in 5 higher educational institutions is marketing abroad. This lack of attention to international demand illustrates that the sector is not taking a proactive role about maintaining regional competitiveness.

223 http://ec.europa.eu/education/programmes/tempus/countries/higher/jordan.pdf, p4

5.4 Related and Supporting Industries

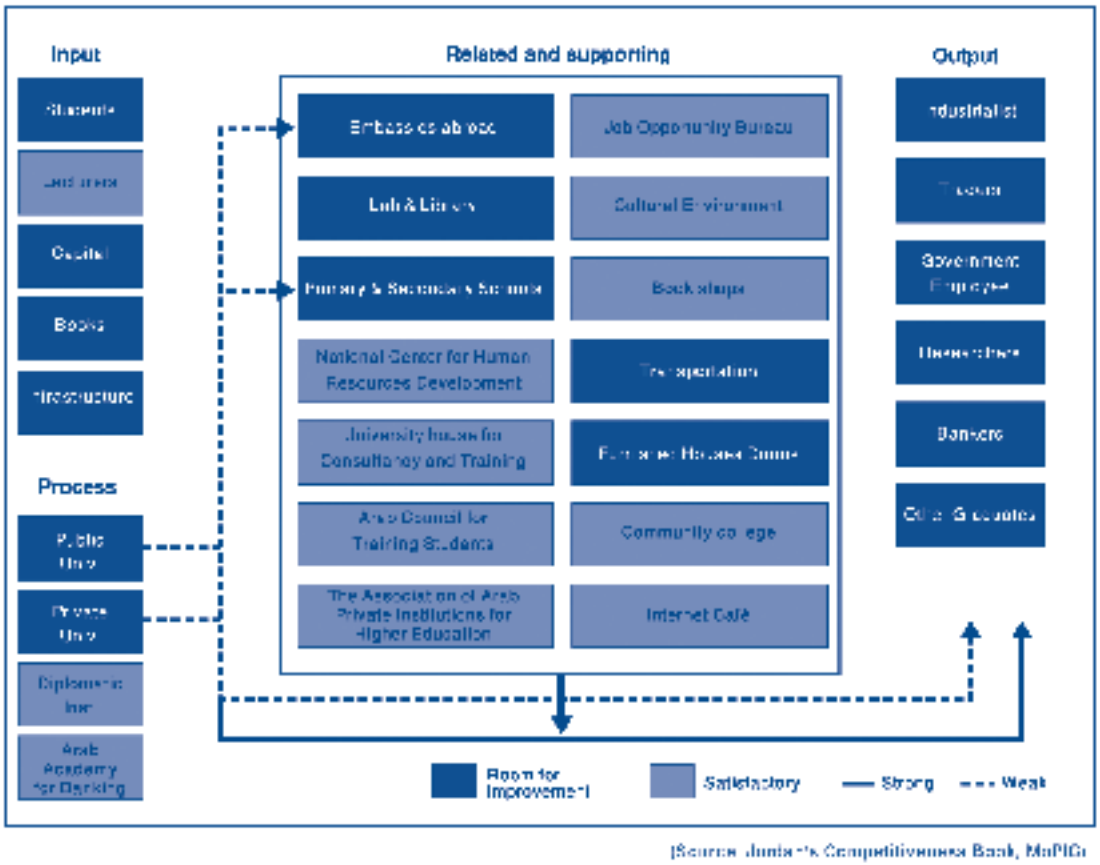
There are many important related and supporting industries as illustrated through the graphic below. Logistically, higher education depends on basic infrastructure to include housing and transportation so students who do not live on campus have their requirements met. Increasingly higher education also depends on the infrastructure related to information and communication technology due to its capacity to disseminate knowledge efficiently and ensure students have access to the most recent and reliable information. Higher education, particularly private universities, depends on a sound financial sector that is efficient and effective and responsive to the needs of students who may require loans to pay for their education. Universities also depend on the quality of basic education to ensure that incoming students have the necessary foundation.

Several institutions assist the industry in cooperation, including:

- King Abdullah II Development fund.
- Arab Council for Training Students of Arab Universities
- National Center for Human Resources Development
- National Employment Center
- Association of Arab Universities
- Association of Arab Private Institutions for Higher Education

The government could also be considered a related and supporting industry in many ways and its role in the sector is further discussed below.

Figure 7.15 - Higher Education Cluster Map[224]



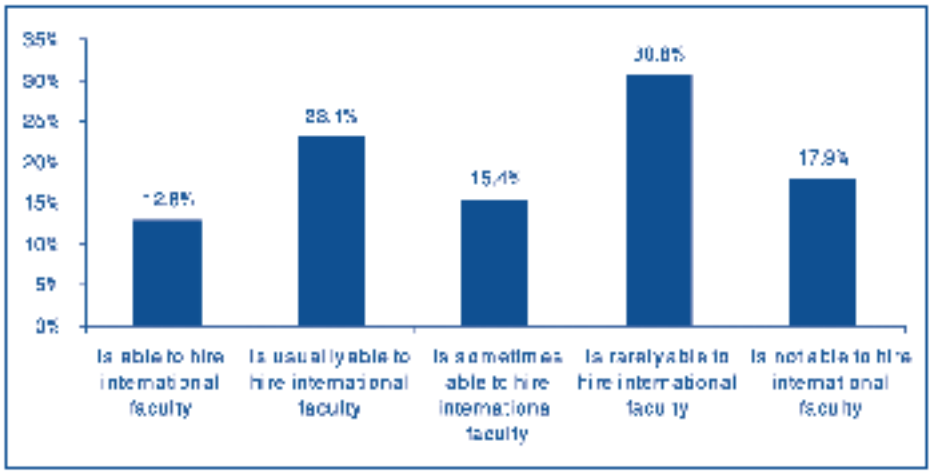
[Source: Jordan's Competitiveness Book, MoPIC]

[224] (http://www.competitiveness.gov.jo/files/chapter%20Nine.pdf, JNCT 2000)

5.5 Regulations and Role of the Government

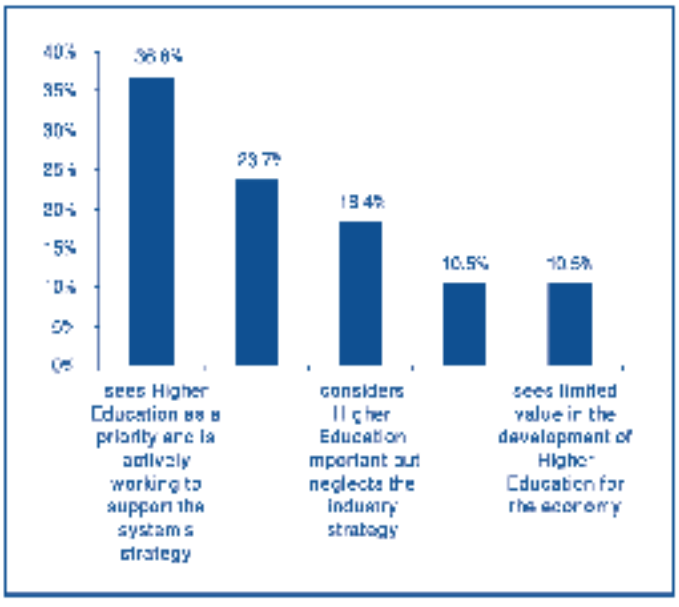
The government plays a particularly important role with the higher education sector and helps to provide funding, accreditation, and other incentives and regulation. Moreover, the government, through its embassies abroad, can help promote the sector and attract greater numbers of international students to Jordan. Yet currently the government represents a constraint to the sector's competitiveness because, despite efforts to develop general strategies, the government has yet to implement concrete widespread reforms.

Figure 7.16 - My organization:



Source : JNCO, Higher Education Stakeholders Online Survey, 2007

Figure 7.17 - The government:



Source : JNCO, Higher Education Stakeholders Online Survey, 2007

The government plays the role of finance provider by subsidizing public universities. Yet, public universities continue to suffer from budget deficits. The Ministry of Higher Education and Scientific Research represented by the Higher Education Council play a vital role in regulating the fees for public and private universities. Additional government restraints include the restrictions on hiring international faculty and the instability of government policy which was cited by 53% of respondents as problematic or extremely problematic. Yet the majority of respondents somewhat or strongly agreed that the government sees higher education as a priorty and is actively working to support its strategy. This suggests that the industry recognizes the challenges the government currently presents, but also the efforts the government is trying to make to improve the situation.

The government has recently separated the accreditation council into a private organization and is working to develop a University Achievement Exam which, once realized, will be administered to every Jordanian graduate from all private and public universities and which will provide them with an internationally recongnized qualification. The exam will also help identify deficiencies in certain educational institutions or programs. These are part of the government's efforts to improve the governance and accountability of the sector.

Despite general budget cuts to public universites, the GoJ has also designed a fund, established by law number 58 for 2004, aimed at giving scholarships and loans to well-qualified and in-need students to cover university tuition (see box). MOHESR plays a vital role in this field:

6. Constraints to Growth

The constraints to growth of the higher education sector include the lack of quality assurance mechanisms, financing, governance, demand-driven curricula and international marketing.

1. Quality of students and staff

As previously mentioned, the primary and secondary schools in Jordan do not take a hands-on approach that encourages critical thinking and prepares students for a challenging liberal arts style curriculum at colleges and universities.

Scholarships:

MOHESR granted 11,070 scholarships in 2006/2007 including 400 annual scholarships for the top students in the Tawjihi exam in different governorates and 1100 scholarship for valedictorians to attend public Jordan universities. It and also co-operators with various other institutions to provide scholarships, including:

1. King Abdullah II development fund by (320) scholarship per year.
2. Princess Mona for Nursing supported by (30) scholarship per year.
3. Fast link corporation fund by (30) scholarship per year.
4. Saraya Al-Aqaba corporation by (10) scholarship to study hospi tality at outdoors universities.
5. International Tabacoo and cigarettes corporation by (12) scholar ship, one scholarship for each government per year.
6. GS Bank Grand total number of scholarship (10) recently 2007.

In addition, the MOHESR has introduced upon the cultural agreements between Jordan and other countries total number 1290 of seats at BSc in Jordan universities and 251 seats in graduate programs for Arab and foreign countries for 2007/2008.

2. Governance

The role of the Council on Higher Education (CHE) in allocating resources and directing enrollments into specializations is constraining the universities to respond to market needs rapidly. Moreover, the government's role in appointing university leadership further limits the market accountability of the universities. The industry must be able to make key staffing and enrollment decisions if it is to be competitive and responsive to market conditions.

3. International linkages and marketing

As previously discussed, there are very few examples of the Jordanian higher education system promoting itself abroad and fostering international linkages. 2 essential steps in the path towards competitiveness.

4. IT and R&D

The highly centralized management contributes to a lack of incentive for innovation in the industry. Moreover, the industry lacks the necessary linkages to the private sector in order to build a sustainable research and development sector. Moreover, IT infrastructure is lacking in the universities and they are missing out on key emerging opportunities, particularly establishing e-learning programs. Universities must adopt e-learning initiatives to improve students' skills and teach them new ways of managing knowledge and information. An integrated e-learning program will ensure students and faculty keep abreast of the rapid changes in their areas of study and research. It also offers opportunities to individually customize curricula and provide individuals

increasing flexibility in their education. Moreover, e-learning presents the possibility of reducing the costs of instruction.[225]

5. Industry demand-driven curricula

The unemployment rates for university graduates increased during the last 7 years, from 13% to 21% but unemployment rates for the community colleges decreased from 13% to 11%.[226] This suggests that community colleges are better able to understand the industry demand and satisfy that demand through relevant skills training of their students.

6. Funding

Student enrollment grew by 20% annually since 2001 while government subsidies decreased by 9% annually in the same period after peaking in 2003 at 35% and returning down to just over 20% in 2005.[227] Major funding constraints include the fact that universities have no control over student tuition fees and public universities have no control over student enrollment. The government subsidies fluctuate considerably on a yearly basis and are unpredictable. Consequently, universities find it difficult to adopt long-term financing plans to support its activities.

[225] Omar Al-Jarrah & Mustafa Yaseen, February 12, 2007, "A Competitive Edge in the Use of Information and Communica tion Technology in Higher Education", HEDP conference.

[226] HEDP Government's Implementation Completion Report, HEDP p.6

[227] Financial status of public universities, presentation at HEDP conference, Feb. 12, 2007

Part III: Conclusion: The Future of Jordan's Competitiveness

This report has presented a point-in-time assessment of Jordan's competitiveness in 2007. Extensive analysis of the macro-economy, micro-economy and five sectors have revealed a number of key themes that can provide the basis for Jordan's competitiveness agenda in 2008:

1) **Jordan has accomplished a great deal.** Jordan has achieved many improvements in the quality of its business environment. Jordan's businesses also boast many accomplishments in the international arena.

2) **Yet there is urgency for action.** Across the public and private sector, leaders are impatient for reform, and for a vision of competitiveness that is consistently and aggressively pursued. Many strategies and reform initiatives developed over the past five years are struggling to gain traction. At the same time, other countries are making tangible, highly visible progress in reforming and transforming their economies.

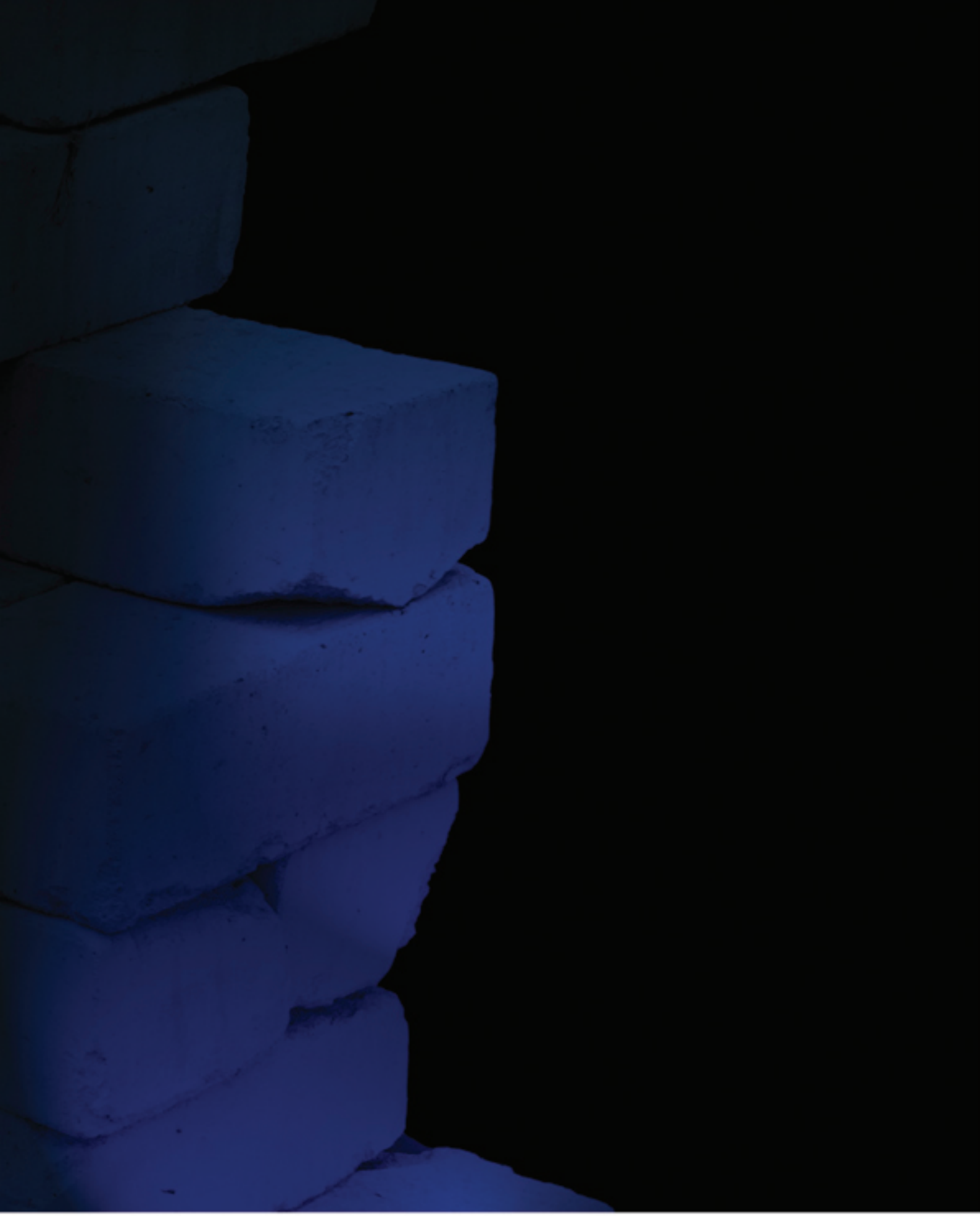
3) **Jordan's economic openness and current foreign investment flows into Jordan are an opportunity to invest in productive activities.** Foreign investment can provide capital needed for productive activities. If structured and channeled effectively, FDI can serve as a source of knowledge and linkages to other markets. Yet, currently the majority of foreign investment flows appear to be going to unproductive real estate investments that risk driving inflation, and the cost of living, higher. Equally, Jordanians are investing in their economy, although not at the levels and with the productivity that is desirable.

4) **But Jordan's business environment still presents major obstacles for business.** An environment that enables businesses, and that does not create barriers to business investment and operations, is critical to attracting investment and keeping talented Jordanians in Jordan. Globally competitive investors and skilled workers require an environment in which they can maximize productivity, implement competitive strategies, and fairly capture a high return. Jordan's business environment imposes numerous constraints that are limiting labor productivity, efficient operation and the return on financial capital.

5) **Jordan's human capital, the foundation of its competitiveness, is at risk.** Jordan is a seedbed of skilled and experienced professionals in the Middle East. But 'brain drain', the migration of professionals to other regions, and education and training systems that do not meet business' needs are immediate and significant threats to Jordan's long-term prosperity. With limited physical resources, Jordan's future prosperity will be determined by its ability to train and retain highly skilled and productive workers.

6) **Public-private cooperation must be based in fact and focused on action.** The challenges facing Jordan require a coordinated effort to act. Formal dialogue that builds consensus across the public and private sectors is critical for Jordan's economic leadership to build the momentum for change and action

Finally, while Jordan faces competitiveness challenges and risks, Jordan also has enormous opportunities to emerge in the next 5 years as a recognized competitiveness leader, in the region and globally. Many of Jordan's competitiveness "basics" are well ahead of most other countries. **The optimistic conclusion of this report is that, with focus, and applying the lessons learned from best practices world-wide, Jordan can establish a world-class business environment, with streamlined regulations and procedures that are implemented effectively,**with strong services and infrastructure, and with an education and training resource that is in tune with and responsive to the needs of world-class business. Jordan is already taking many steps towards this goal. Jordan has been successful in attracting foreign investment and encouraging domestic investment; this can be dramatically increased, **especially encouraging investment that offers innovation, market linkage and knowledge transfer**. Jordan's businesses and industries can focus on the key strategies and international best practices that will enable them to emerge as world-class competitive leaders; indeed, some Jordanian firms are already accomplishing this competitive leap forward. There may be challenges in learning and adopting the improvements and changes that lead to a truly competitive business and economic performance. But the models are available to Jordan, **and with clear vision, and concerted implementation of aggressive competitiveness initiatives, Jordan will achieve remarkable results**.



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